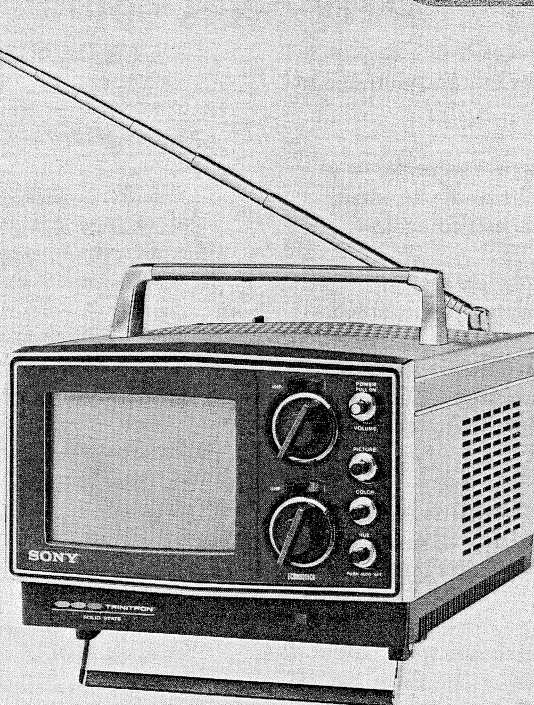


# KV-5100

*USA Model*

*Chassis No. SCC-37B-B*



**TRINITRON®**  
**COLOR TV**

## SPECIFICATIONS

<b>Television System:</b>	American TV standards	<b>Power Requirements:</b>	120 V AC, 60 Hz 12V DC 24V DC
<b>Color System:</b>	NTSC	<b>Power Consumption:</b>	34 W (max) with 120V AC 22 W (average) with 12 V DC 19 W (average) with 24 V DC
<b>Picture Tube:</b>	12.7 cm, 5" (measured diagonally), 55° deflection TRINITRON system	<b>Dimensions:</b>	226 (w) x 169 (h) x 314 (d) mm 8 7/8 (w) x 6 5/8 (h) x 12 3/8 (d) inches
<b>Semiconductors:</b>	1 FET, 55 transistors, 47 diodes and 4 ICs	<b>Net Weight:</b>	5.9 kg (12 lb)
<b>Antennas:</b>	VHF: 75 $\Omega$ unbalanced (telescopic dipole) 75 $\Omega$ unbalanced (external antenna jack) UHF: 300 $\Omega$ balanced (loop antenna*) *Note: Supplied with accessories	<b>Accessories:</b>	Earphone (ME-20 B) External antenna connector (EAC-4) UHF loop antenna (AN-15) AC cord Instruction manual
<b>Channel Coverage:</b>	VHF channels: 2 – 13 UHF channels: 14 – 83 (70-position detent tuner)		
<b>Intermediate Frequencies:</b>	Picture i-f carrier: 45.75 MHz Color subcarrier: 42.17 MHz Sound i-f carrier: 41.25 MHz		
<b>Sound System:</b>	4.5 MHz intercarrier Output power: 0.5 W (at 10% harmonic distortion) Speaker: 8 cm (3 1/4 inches) dia, 32 $\Omega$		
<b>Video System:</b>	RGB cathode drive		
<b>Automatic Controls:</b>	ABL (automatic brightness limiter) ACC (automatic color control) ACK (automatic color killer) AFC (automatic frequency control) AFT (automatic fine tuning) AGC (automatic gain control) ANC (automatic noise canceller) AVR (automatic voltage regulator)		
<b>Anode Voltage:</b>	13 kV at zero beam current		

## X-RAY RADIATION WARNING

BE SURE THAT PARTS REPLACEMENT IN THE HIGH VOLTAGE BLOCK AND ADJUSTMENTS MADE TO THE HIGH VOLTAGE CIRCUITS ARE CARRIED OUT PRECISELY IN ACCORDANCE WITH THE PROCEDURES GIVEN IN THIS MANUAL.

**SONY®**  
**SERVICE MANUAL**

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any). Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate, be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metalized" knobs, screws, and all other exposed metal

parts for AC leakage. Check leakage as described below.

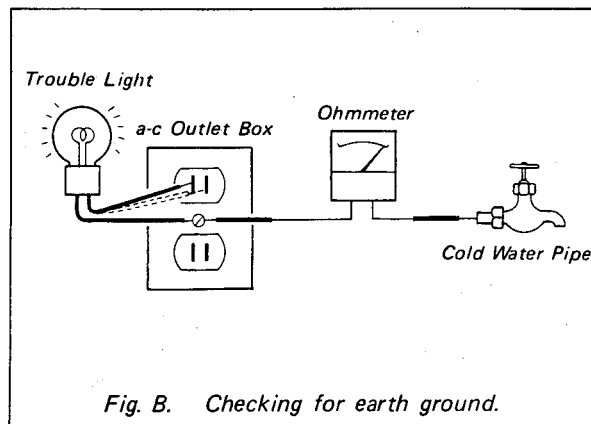
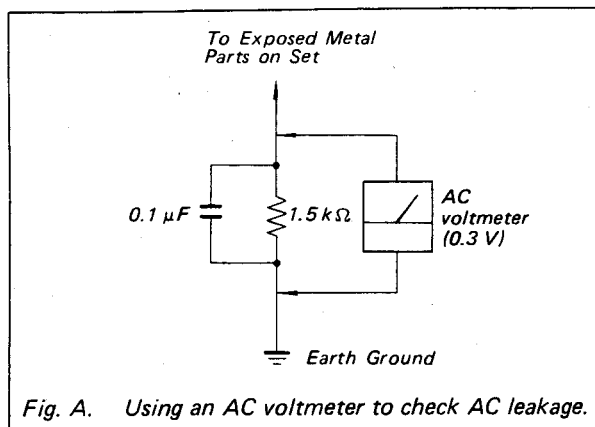
## LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground must not exceed 0.2 mA (200 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.3 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A.)

## HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most a-c outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60 – 100 watt trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line. The lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B.)



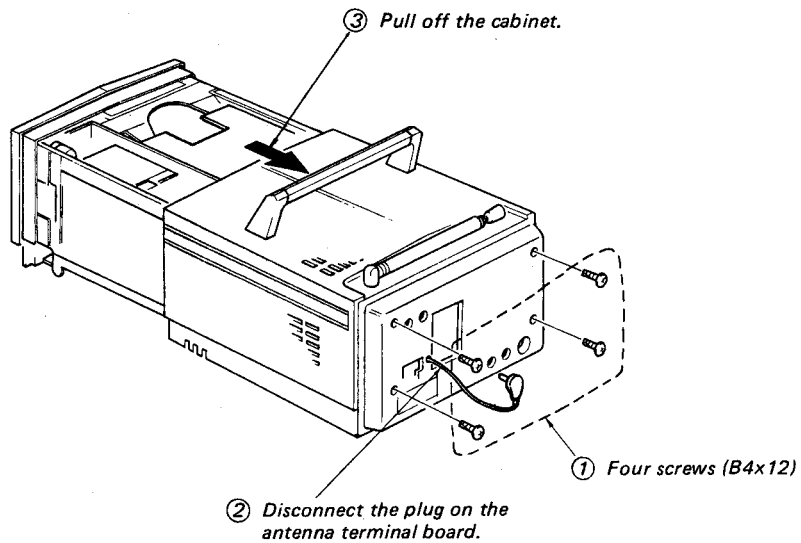


## SECTION 2 DISASSEMBLY AND REPLACEMENT

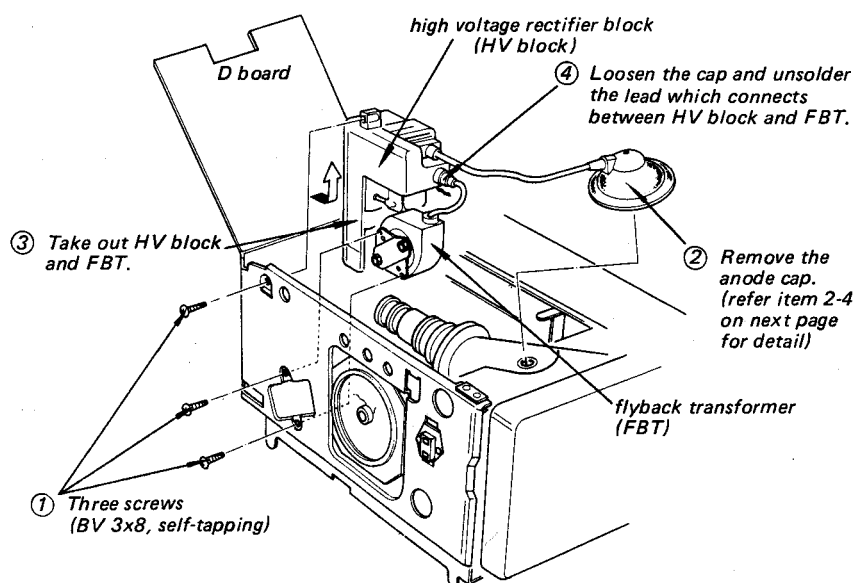
Perform the procedures in numerical order.

**Note:** All screws in this set are Phillips (cross recess) type unless otherwise noted.

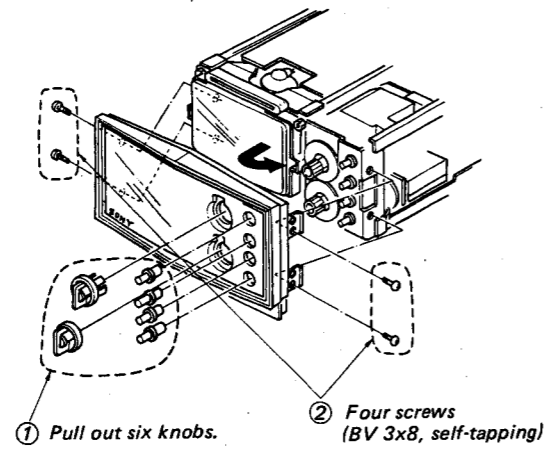
### 2-1. CABINET REMOVAL



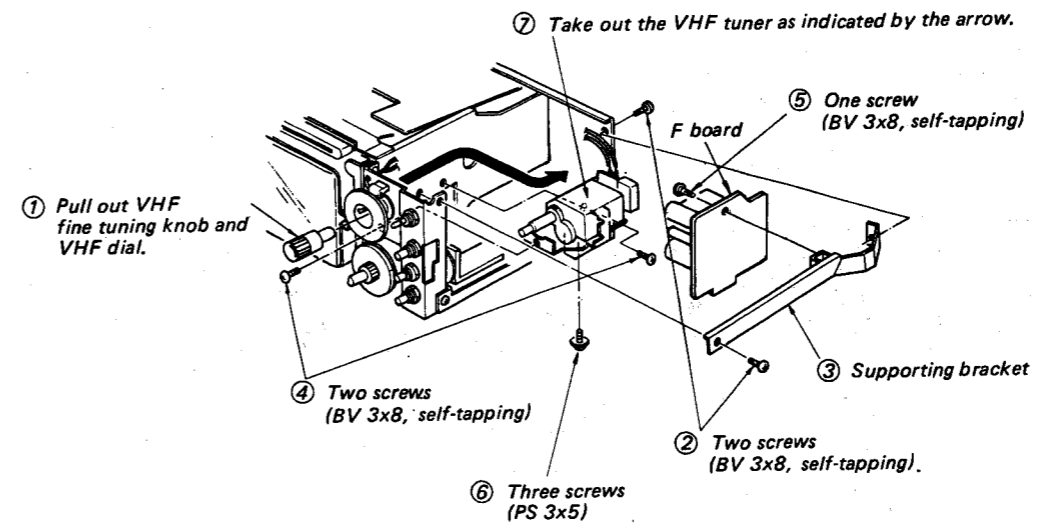
### 2-2. FLYBACK TRANSFORMER AND HIGH VOLTAGE BLOCK REMOVAL



## 2-3. FRONT MASK ASS'Y REMOVAL

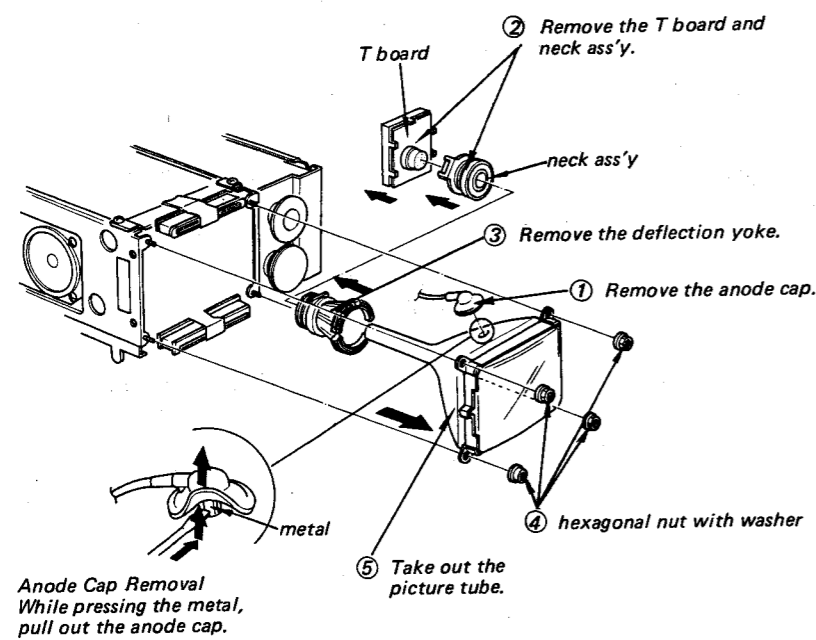


## 2-6. VHF TUNER REMOVAL

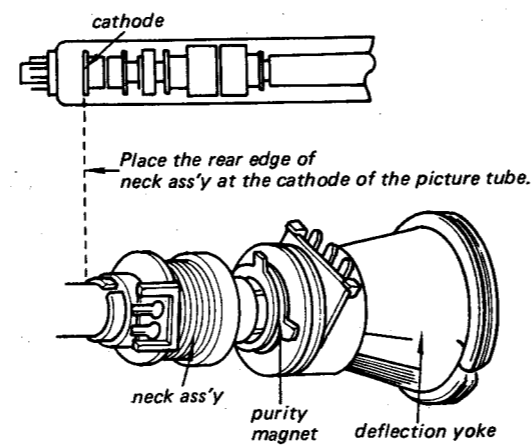


Note: Refer to the schematic diagram for the wiring of tuners.

## 2-4. PICTURE TUBE REMOVAL

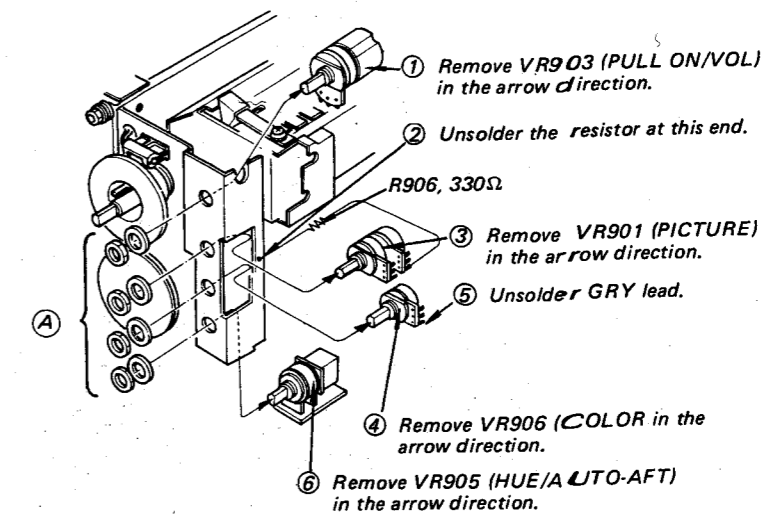


## 2-5. PICTURE TUBE INSTALLATION



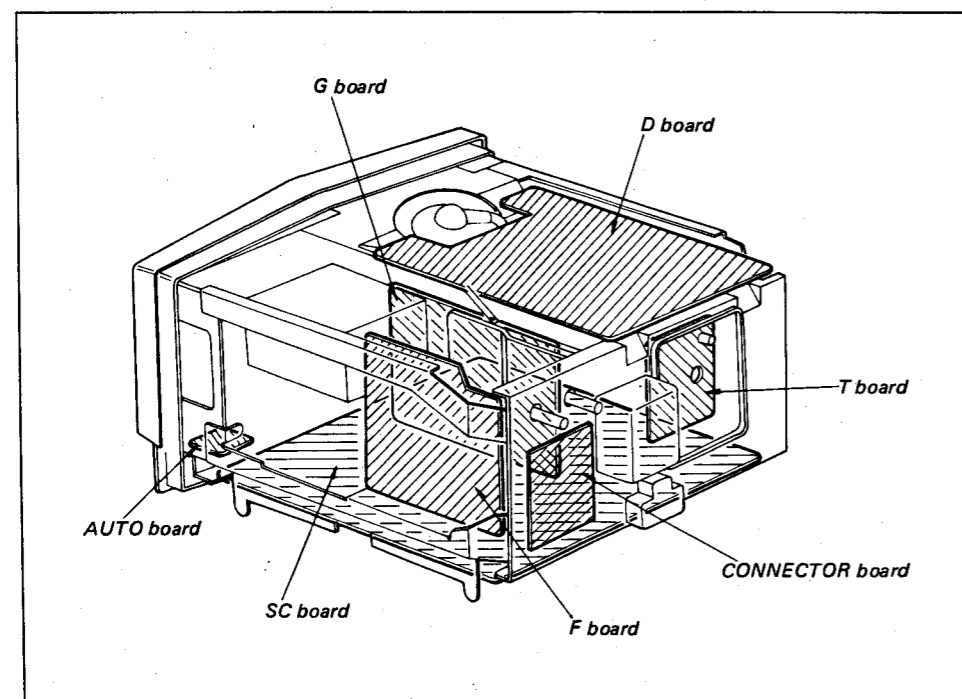
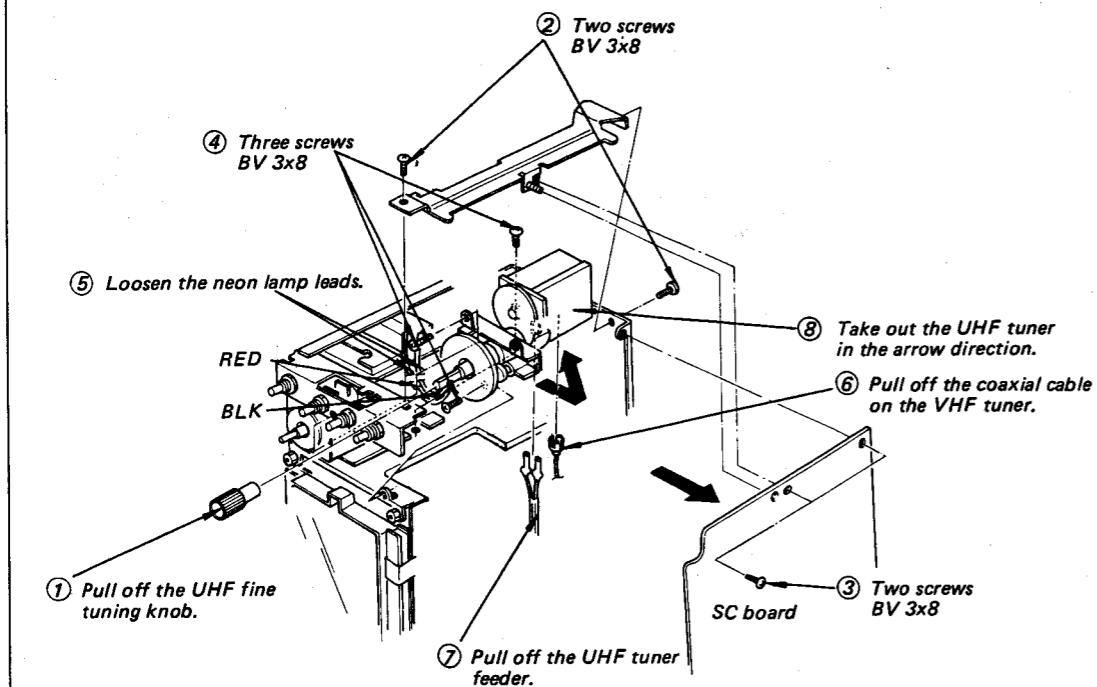
## 2-7. CONTROL REMOVAL

To remove VR903, proceed steps ①  
To remove VR901, proceed steps ②, ③  
To remove VR906, proceed steps ④, ⑤  
To remove VR905, proceed steps ⑤, ⑥



Note: Before starting to remove each control, remove nut and washer as indicated ④.  
Refer to the mounting diagrams for the wiring of variable resistors.

## 2-8. UHF TUNER REMOVAL



## 2-9. UHF TUNER DIAL CALIBRATION

Note: Usually, do not attempt repairing or replacement of the dial mechanism because it is precisely installed and adjusted in the factory.

—Circled Numbers Indicate Sequence—

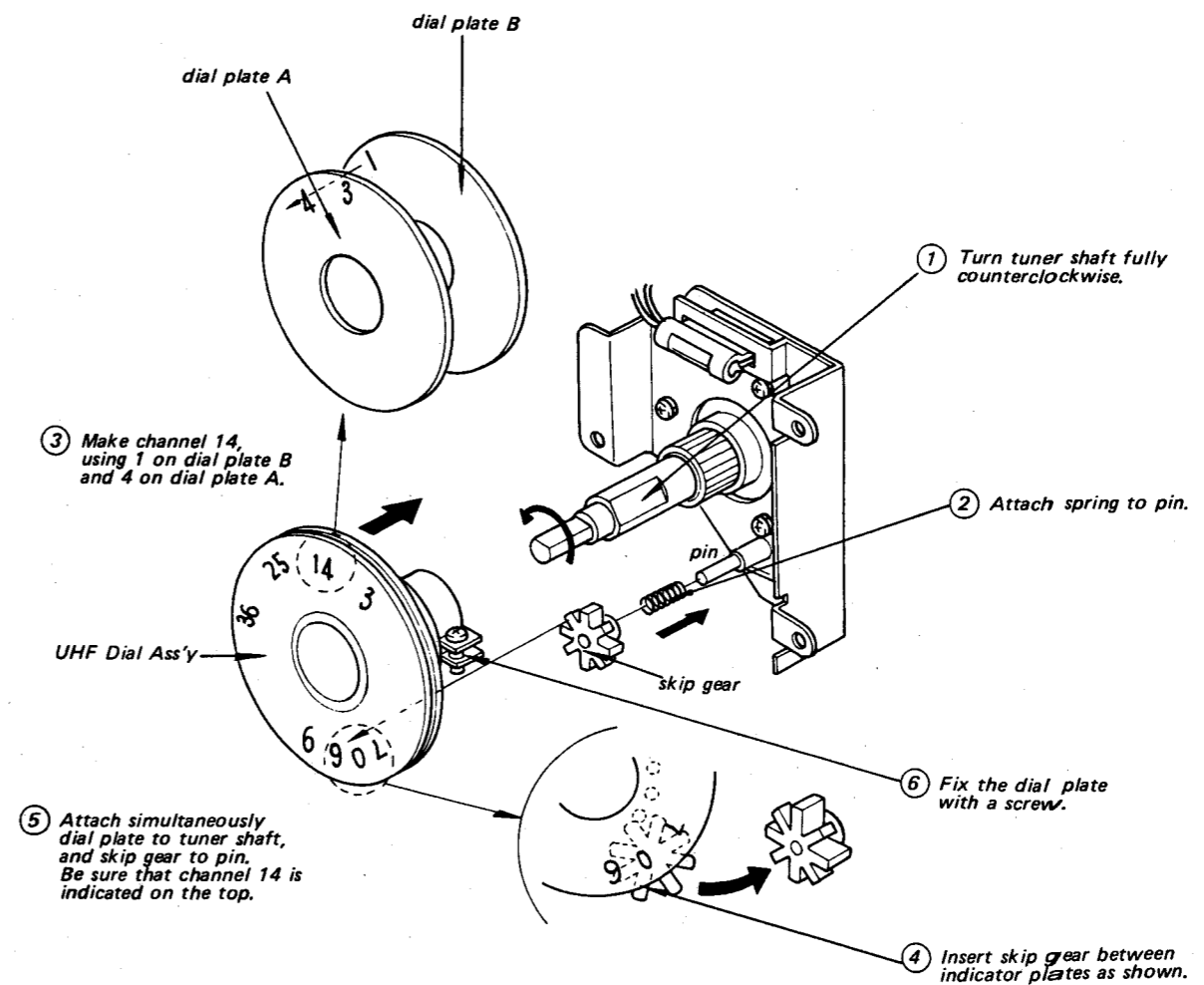


Fig. 2-9 UHF tuner dial calibration

## SECTION 3 SETUP ADJUSTMENTS

### 3-1. BEAM LANDING ADJUSTMENT

Beam landing adjustment ensures correct landing of the three beams on their designated phosphor stripes. Incorrect beam landing results in color contamination (a predominant hue) in those particular areas of the screen. Also, this adjustment is made when a complete realignment is needed after picture tube replacement.

#### Preparation

on the screen ..... cross-hatch pattern from a color-bar/pattern generator  
BRT (VR904) control ..... fully clockwise  
PICTURE (VR901) control ..... fully clockwise

Demagnetize the whole screen securely with degausser.

#### Adjustment Procedure

- (1) Spread the purity magnet as shown in Fig. 3-1.

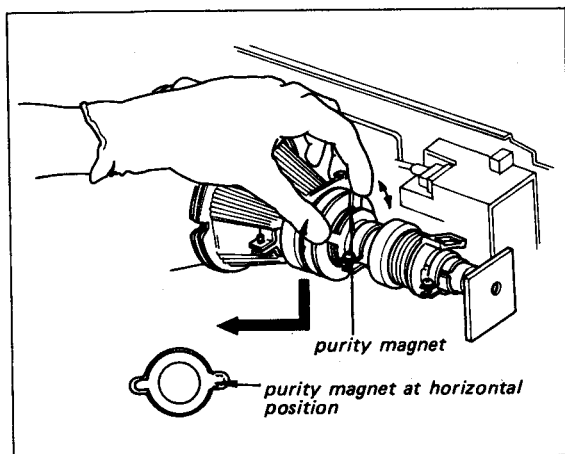


Fig. 3-1. Purity magnet adjustment

- (2) Loosen the screw as shown in Fig. 3-2.

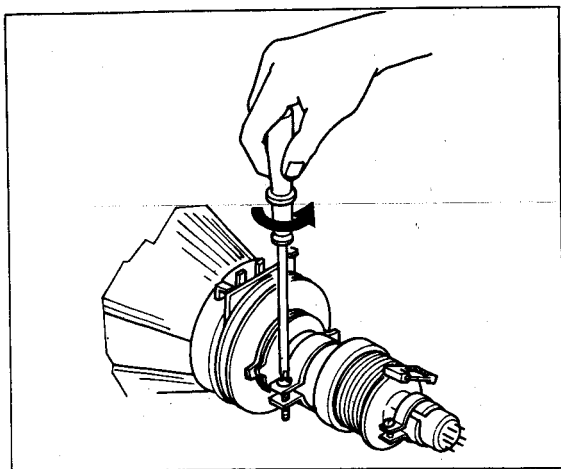


Fig. 3-2. Deflection yoke loosening

- (3) Slide the deflection yoke forward as far as it will go against the funnel of the picture tube as shown in Fig. 3-3.

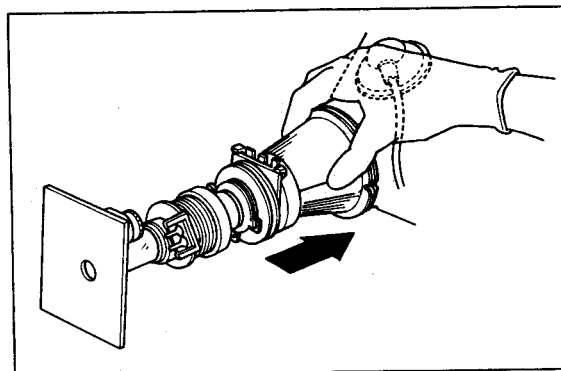


Fig. 3-3. Deflection yoke movement

- (4) Unsolder the red and blue leads on the T board as shown in Fig. 3-4.

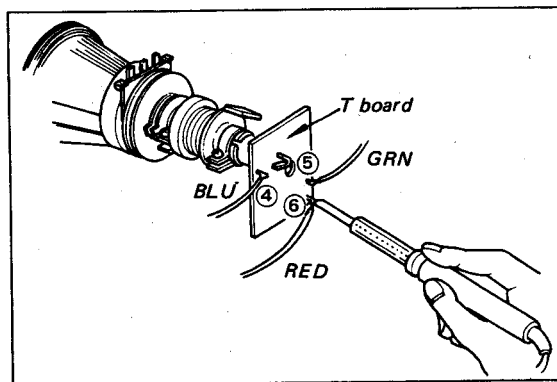


Fig. 3-4. Leads unsoldering

- (5) Adjust the purity magnet tabs to center the green band on the screen as shown in Fig. 3-5. Note that the purity magnet tabs should be placed equal amounts in opposite directions as shown in Fig. 3-6 ( $a = b$ ).

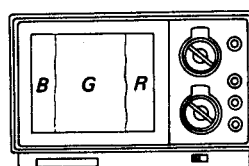


Fig. 3-5. Green band centering

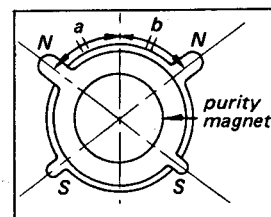


Fig. 3-6. Purity magnet position

- (6) Slide the deflection yoke backward to obtain a uniform green over the entire screen as shown in Fig. 3-7 and Fig. 3-8.

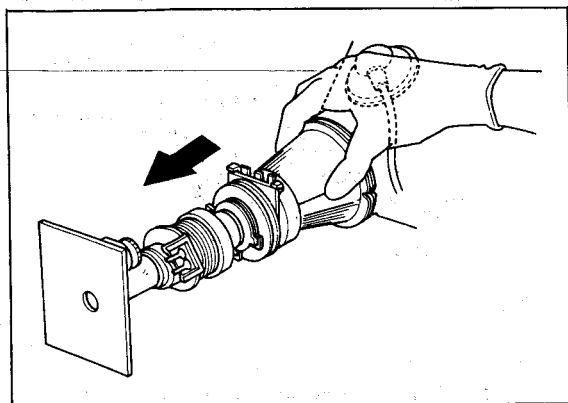


Fig. 3-7. Deflection yoke movement

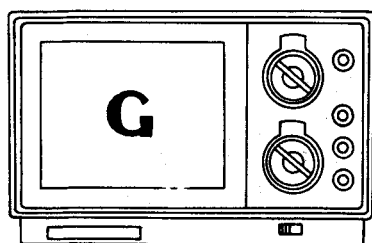


Fig. 3-8. Green raster screen

- (7) Tighten the screw of the deflection yoke.  
(8) Solder the red and blue leads on the T board which had been removed in Step 4.

## 3-2. CONVERGENCE ADJUSTMENT

This adjustment consists of horizontal and vertical static convergence.

**Note:** Conventional dynamic convergence adjustment is not necessary in this small picture tube.

### Preparation

on the screen ..... dot pattern from the color-bar/pattern generator  
BRT (VR904) control.... fully counterclockwise  
PICTURE (VR901) control ..... optimum position

### Horizontal Static Convergence

This adjustment is made to converge the red, green and blue dots horizontally at center of the screen.

### Adjustment Procedure

- (1) Adjust VR1 (H. STAT) to converge the dots horizontally at center of the screen as shown in Fig. 3-9 and Fig. 3-10. If this does not correct the convergence, proceed to Step (2).

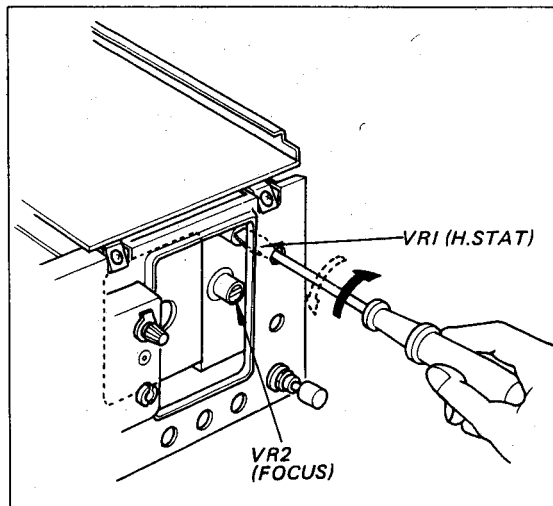


Fig. 3-9. H.STAT VR adjustment

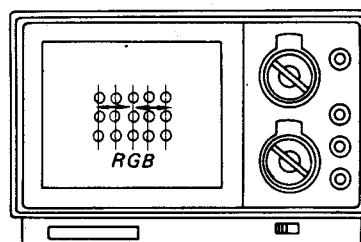
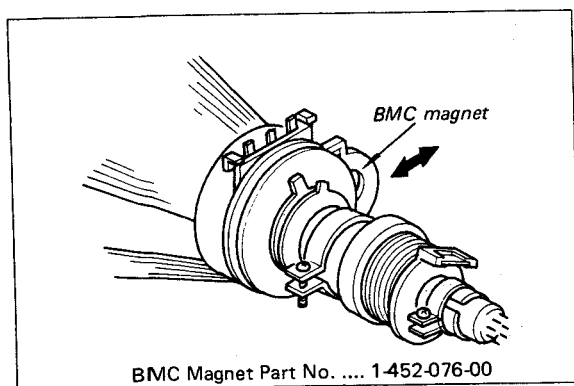


Fig. 3-10. Dots movement

- (2) Install and move a BMC magnet horizontally as necessary as shown in Fig. 3-11.



**Fig. 3-11. BMC magnet adjustment**

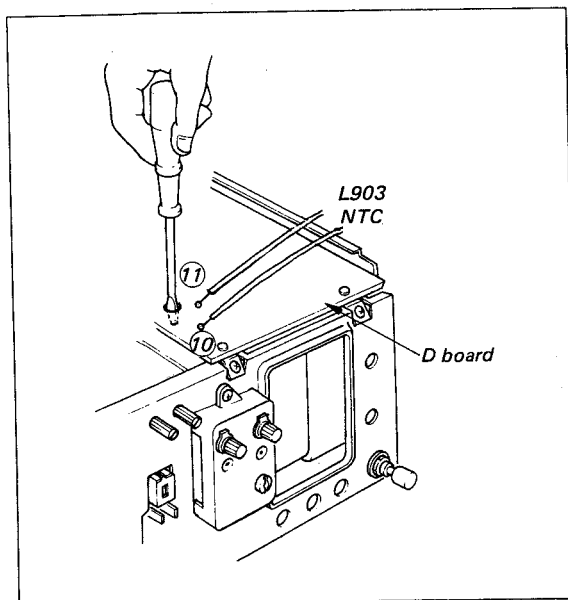
- (3) Check for correct focus and landing.

#### Vertical Static Convergence

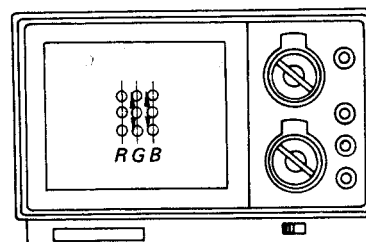
This adjustment is made to converge the red, green and blue dots vertically at center of the screen.

#### Adjustment Procedure

- (1) Adjust VR504 (V.STAT) to converge the dots vertically as shown in Fig. 3-12 and in Fig. 3-13. If this does not correct the convergence, proceed the following.



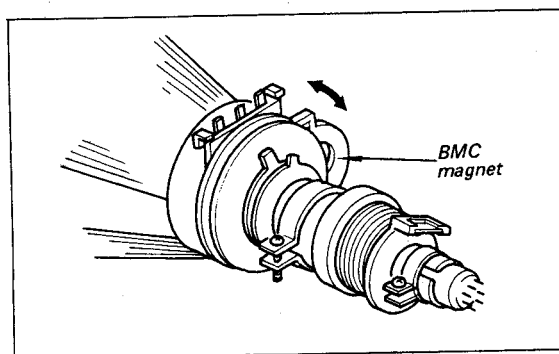
**Fig. 3-12. V.STAT VR adjustment**



**Fig. 3-13. Dots movement**

If correct convergence cannot be obtained, reverse the lead wire connection at the terminal ⑩ and ⑪ as shown in Fig. 3-12, then readjust VR504.

- (2) If the blue and red dots do not converge vertically with the green dots at center of the screen in the previous steps, install and rotate a BMC magnet as necessary as shown in Fig. 3-14.



**Fig. 3-14. BMC magnet adjustment**

- Note:** 1. After a BMC adjustment, check for correct focus and landing.  
2. 1-452-076-00 ..... BMC magnet

### 3-3. WHITE BALANCE ADJUSTMENT

This adjustment consists of low-level and high-level white balance adjustments.

#### Low-level White Balance Adjustment

##### Preparation

on the screen ..... cross-hatch pattern from the color-bar/pattern generator

##### BRT and PICTURE

controls ..... fully counterclockwise

Red, Green, Blue (VR403, 405 and 401)

drive controls ..... fully counterclockwise as viewed from the printed pattern

Red, Green, Blue BKG controls

(VR404, 406 and 402) ..fully counterclockwise

## Adjustment Procedure

- (1) Turn the SCRN control (VR701) slowly and note the hue (red, green or blue) that becomes faintly visible first as shown in Fig. 3-15.

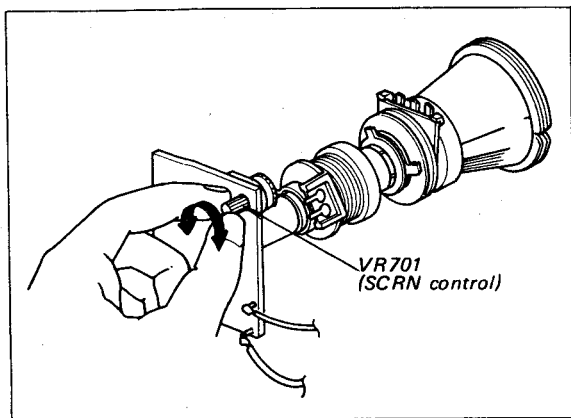


Fig. 3-15. SCRN control adjustment

- (2) Adjust the BKG controls for other two colors to obtain the optimum white balance (nearly gray).

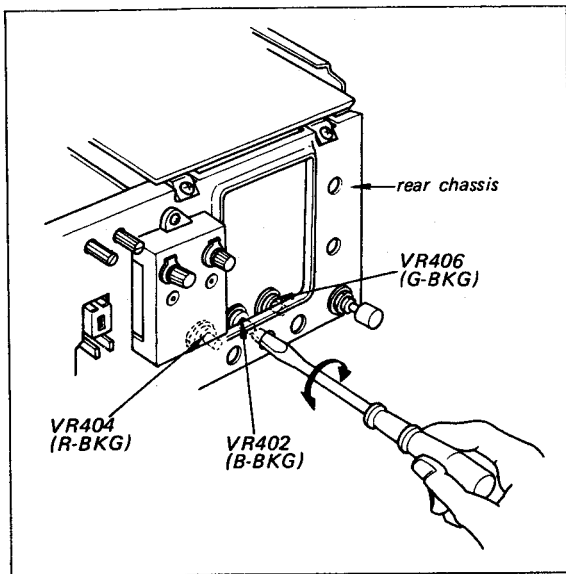


Fig. 3-16. Background controls adjustment

## High Level White Balance Adjustment

- (1) Set the BRT and PICTURE controls fully clockwise.
- (2) Adjust all the three (red, green and blue) DRIVE controls on the SC board for optimum white balance as shown in Fig. 3-17.

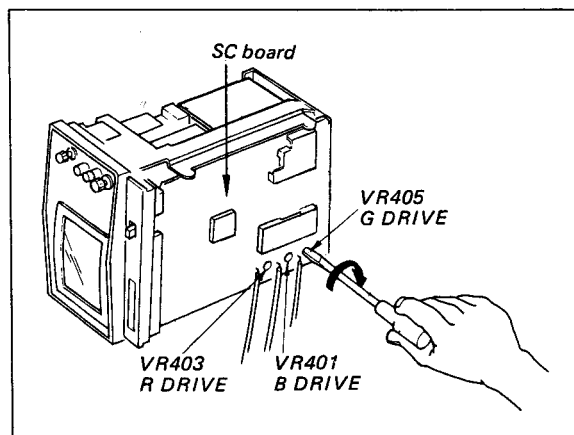


Fig. 3-17. Drive controls adjustment

- (3) Confirm that optimum white balance is obtained at low level.

# SECTION 4

## CIRCUIT ADJUSTMENTS

**Note:****4-1. D BOARD ADJUSTMENTS****(1) TEST EQUIPMENT REQUIRED**

1. Oscilloscope
2. Voltmeter (VOM)
3. Color-bar/pattern generator

**(2) CONTROL SETTING FOR CHECKS AND ADJUSTMENTS**

Controls and switch should be set as follows when performing checks and adjustments.

PICTURE control

BRT control

COLOR control

HUE control

.... Set for best picture

VER control

.... Set for stable picture

AUTO/AFT switch

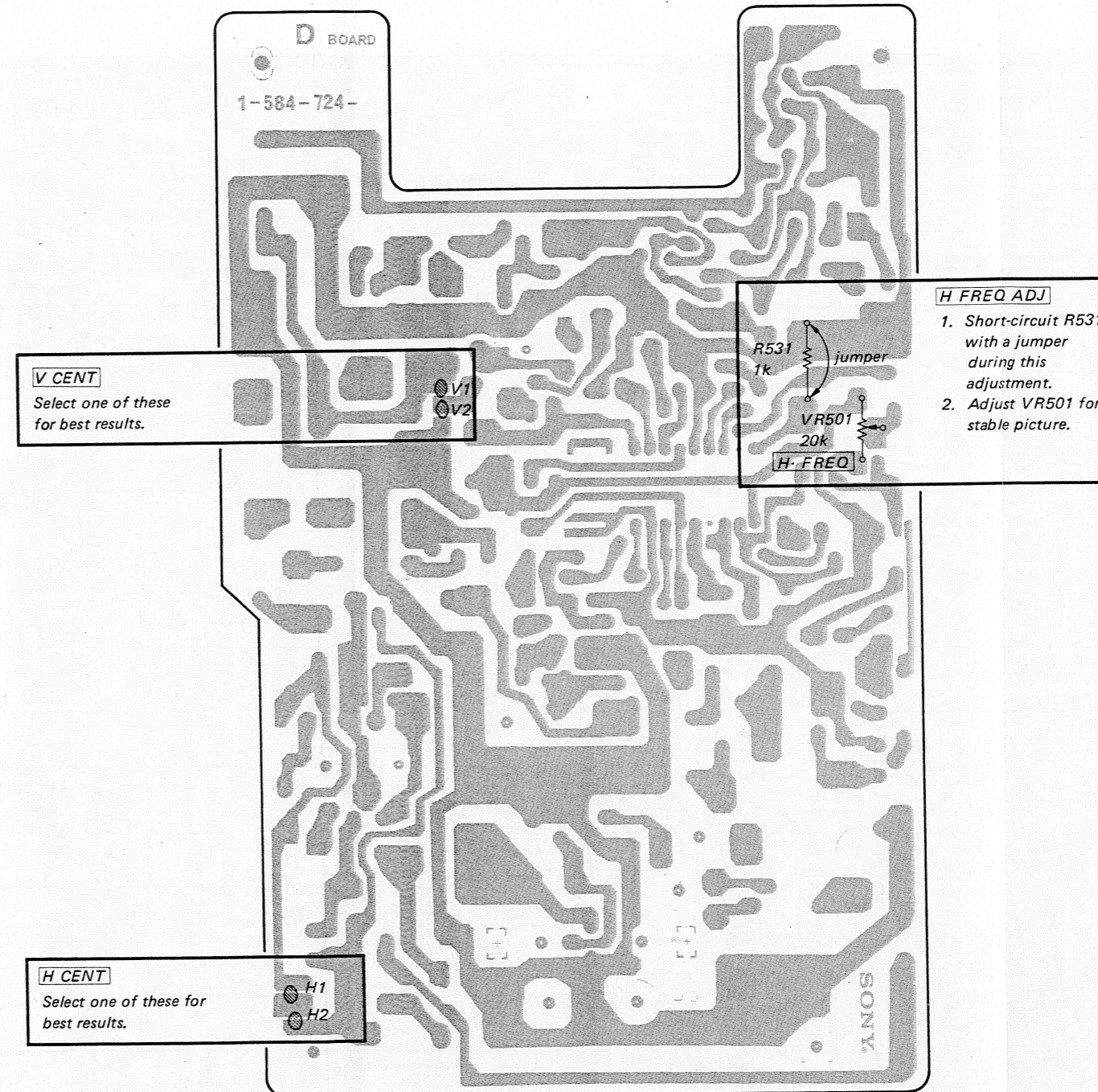
.... ON

**(3) RECEIVING SIGNAL**

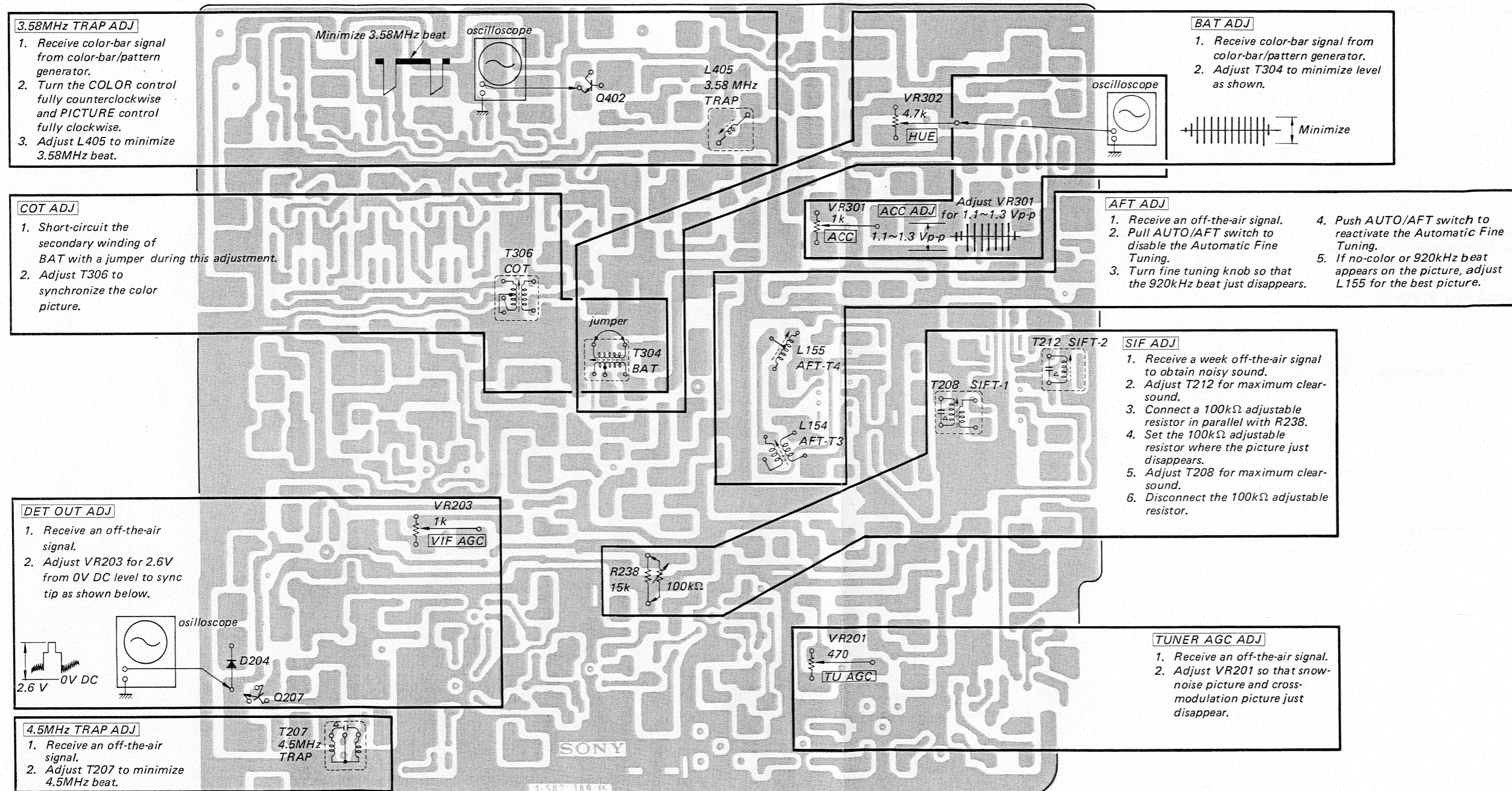
When performing these adjustments, receive any of a crosshatch signal, a color-bar signal or an off-the-air signal.

**(4) TABLE OF CONTENTS FOR ADJUSTMENTS**

AFT ADJ	
4.5MHz ADJ	
SIF ADJ	
DET OUT ADJ	..... SC Board (pages 15, 16)
TUNER ADJ	
BAT ADJ	
ACC ADJ	
3.58MHz TRAP ADJ	
COT ADJ	
H FREQ ADJ	..... D Board (pages 13, 14)
H CENT	
V CENT	
CHG ADJ	..... G Board (page 17)
22V ADJ	

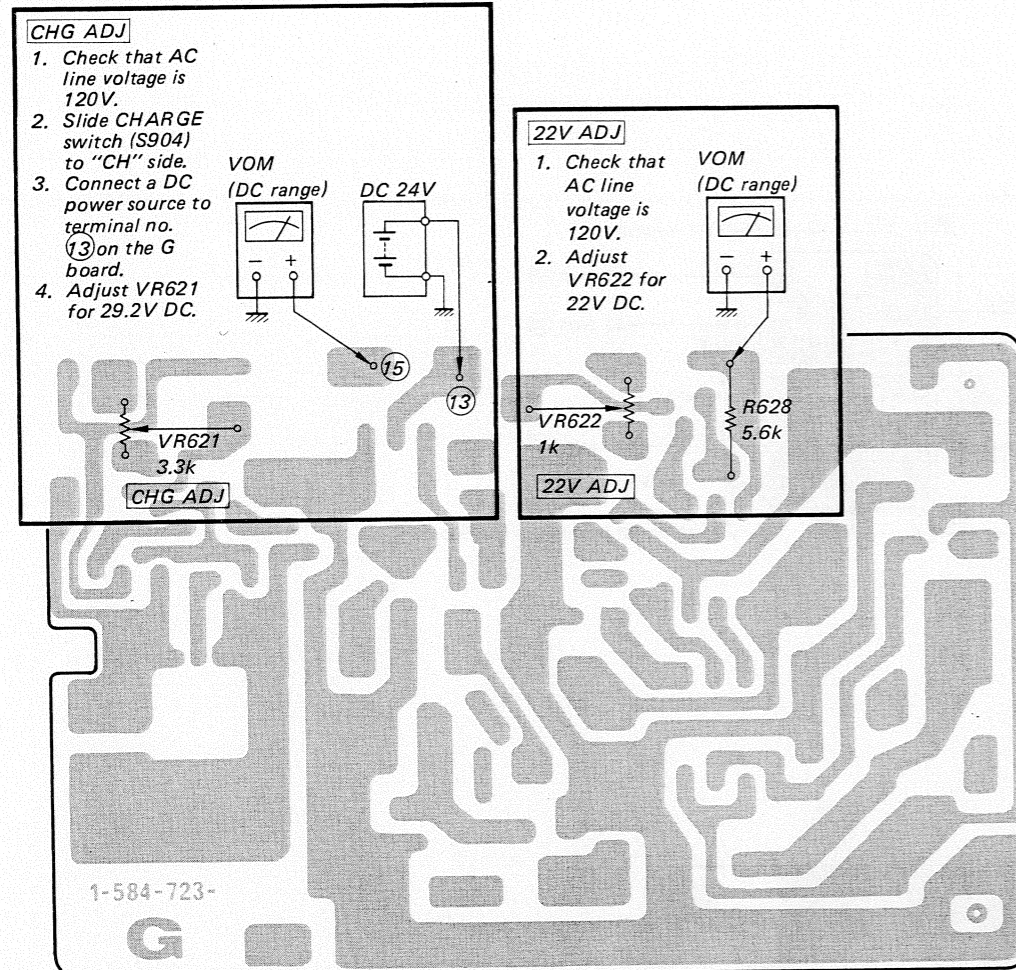


## 4-2. SC BOARD ADJUSTMENTS

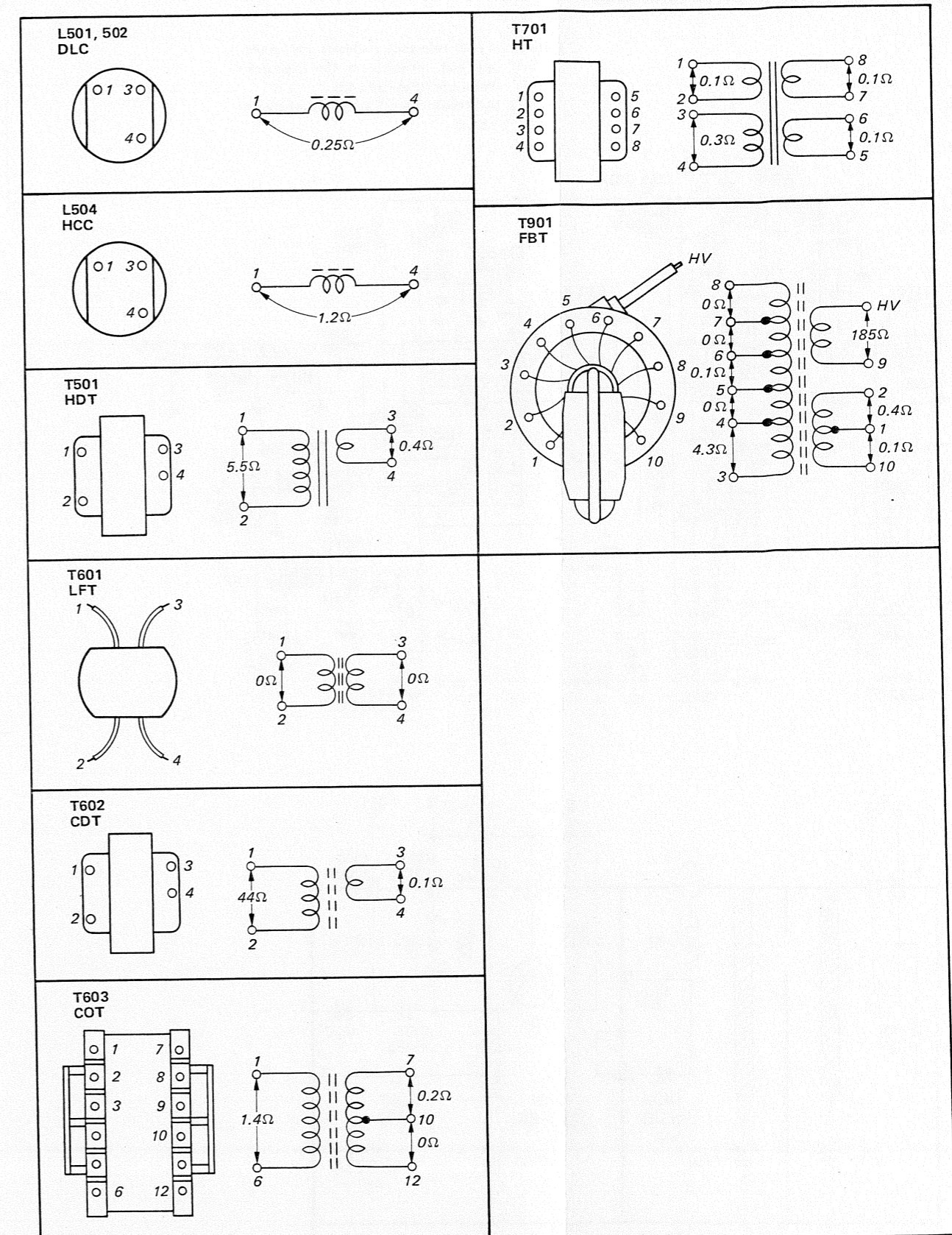


SECTION 5  
DIAGRAMS

## 4-3. G BOARD ADJUSTMENTS



## 5-1. DC RESISTANCE AND WINDING DIAGRAMS OF COILS AND TRANSFORMERS

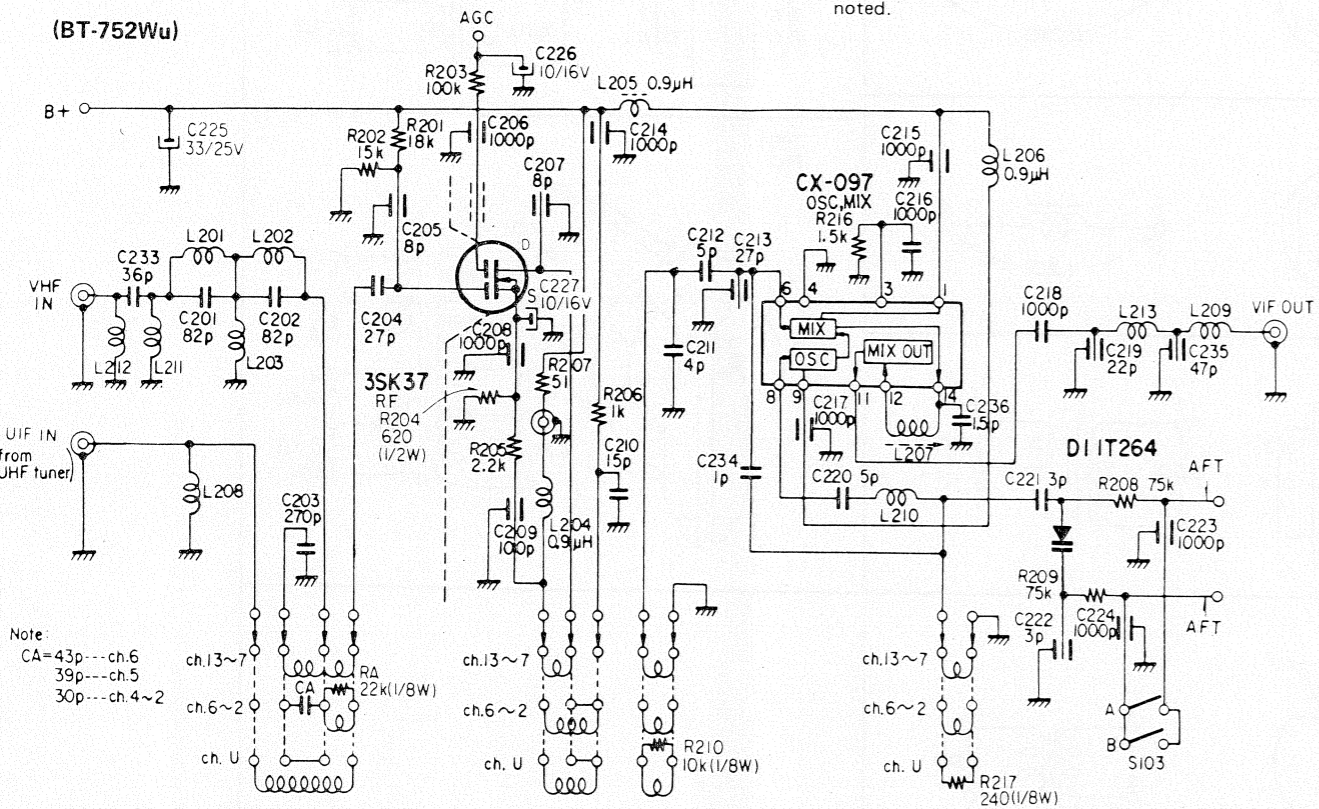


Note: DC resistance is measured with coils and transformers disconnected from circuit.

## 5-2. VHF AND UHF TUNER SCHEMATIC DIAGRAMS

— VHF tuner —

(BT-752Wu)

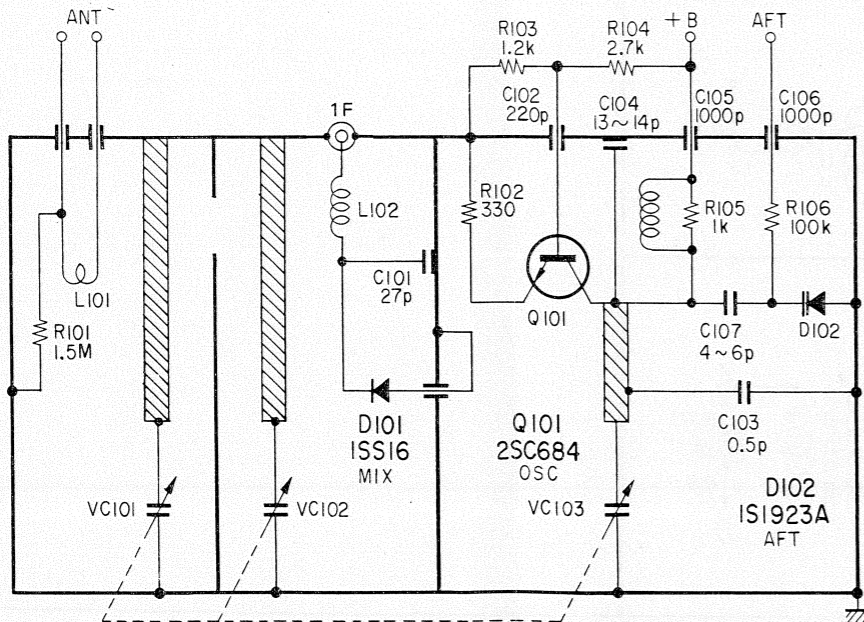


**Note:** 1. Tuner reference numbers and values are not included in the Electrical Parts List (Page 37~43).

2. All resistors are  $\frac{1}{4}$  W unless otherwise noted.

— UHF tuner —

(BT-262)

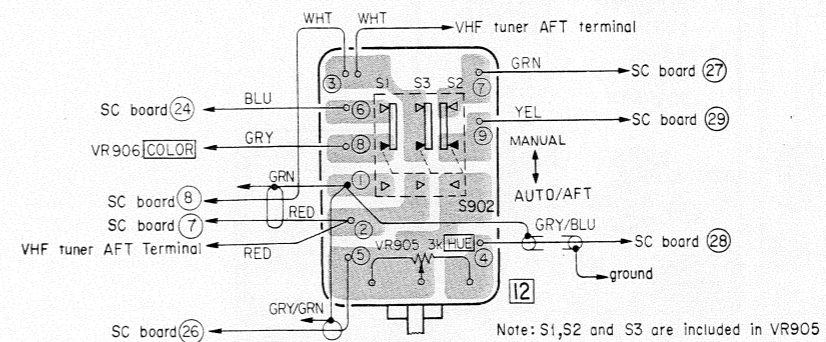


### 5-3. MOUNTING DIAGRAMS

# AUTO

T

– AUTO Board –



**Note:** ● indicates wire connection point on the conductor side.

○ indicates parts or wire connection point on the component side.

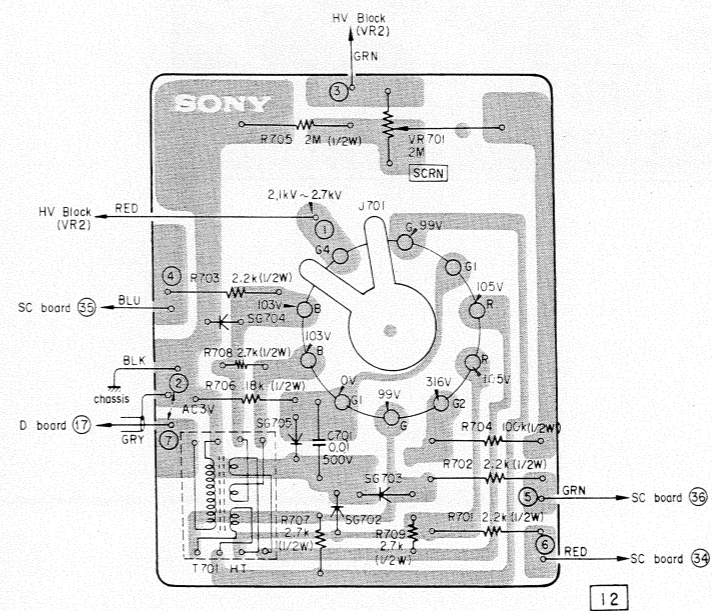
All mounting diagrams are conductor side view.

- indicates parts on the conductor side.

 indicates a nonflammable resistor.

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

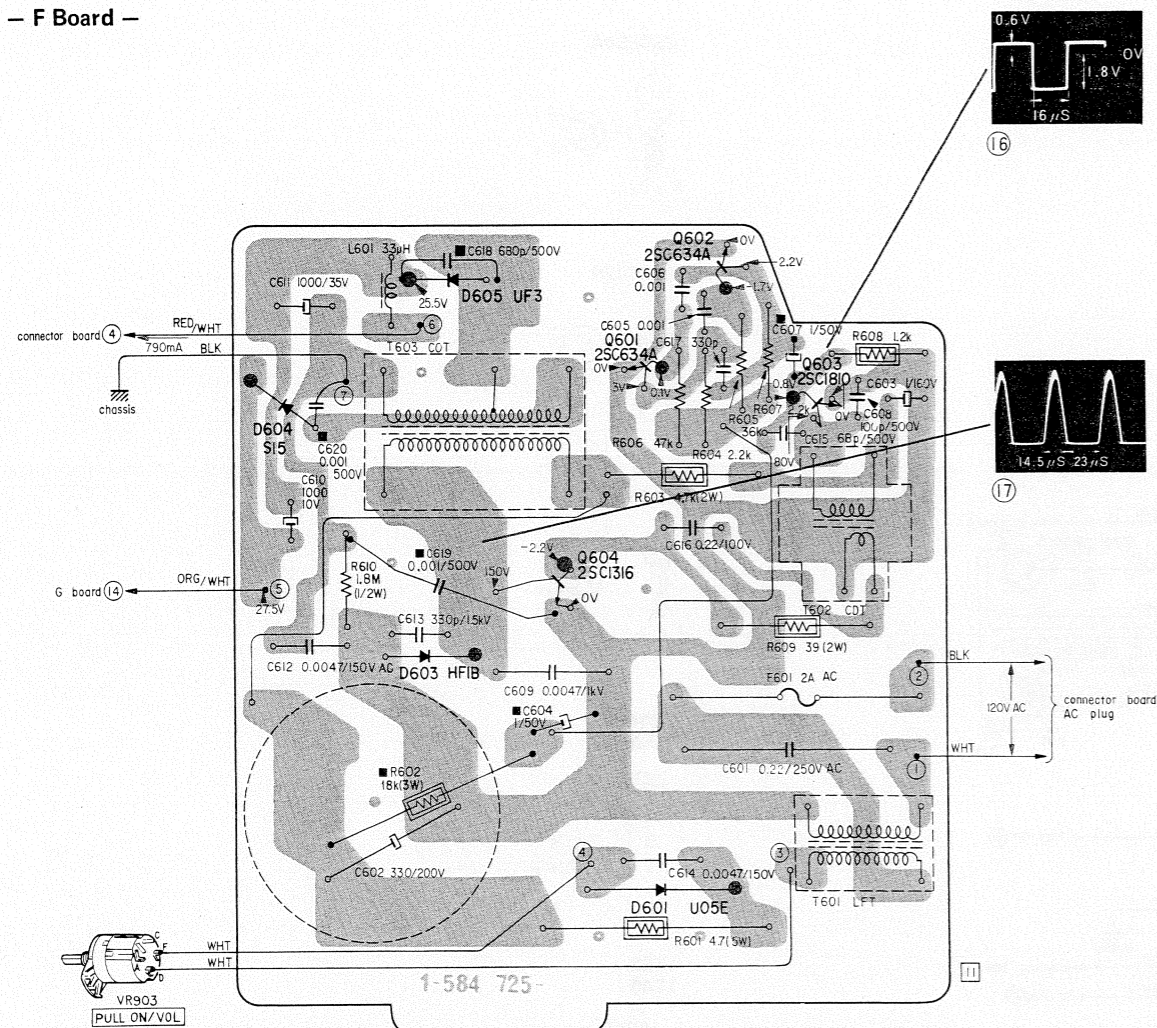
– T Board –



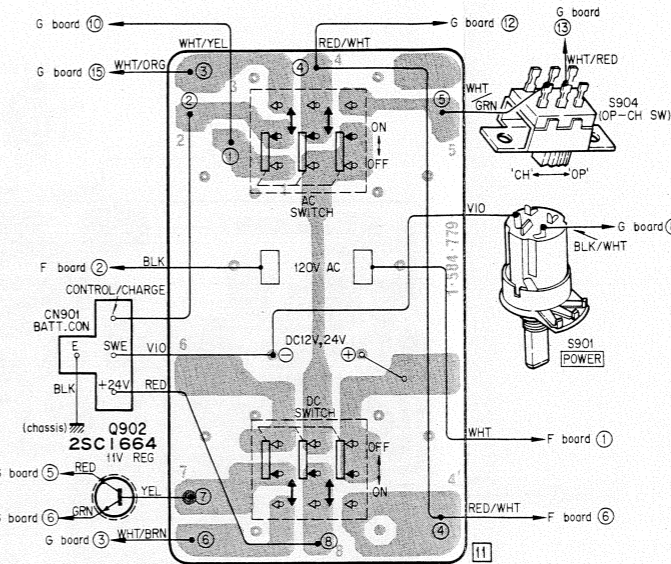
- F Board -

- CONNECTOR Board -

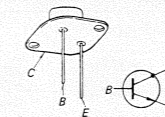
F



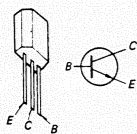
Q		604	601	602	603
D	604	603, 605	601		



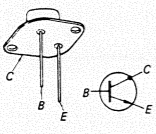
2SC1664



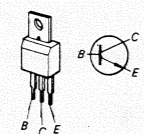
2SC634A



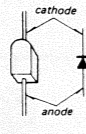
2SC1316



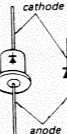
2SC1810



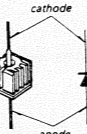
HF1B



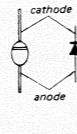
S15



UF3



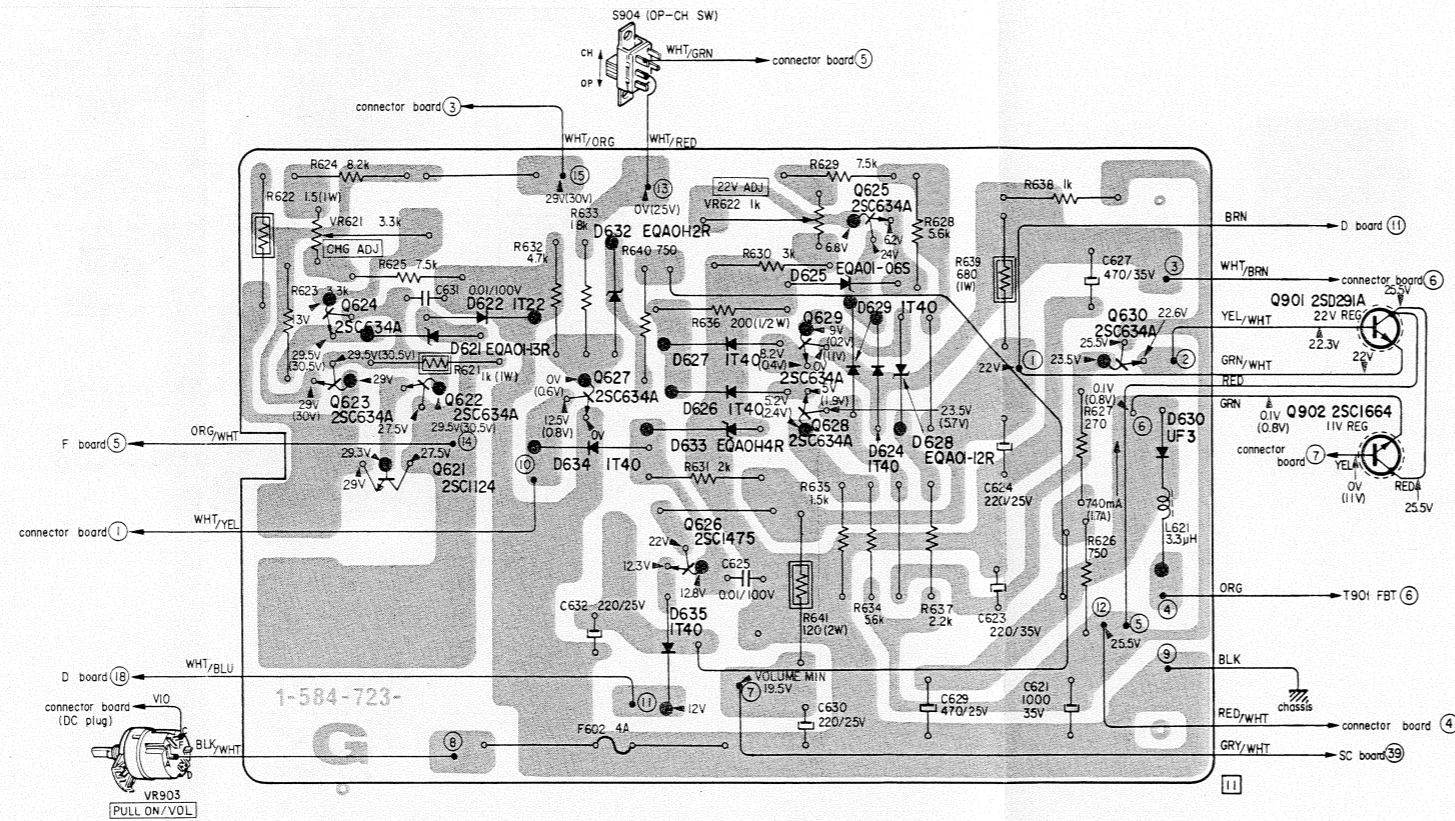
U05E



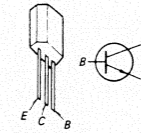
— G Board —

G

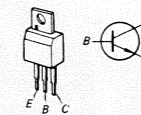
G



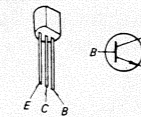
2SC634A



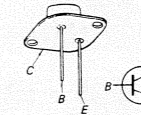
2SC1124



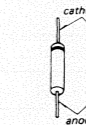
2SC1475



2SC1664  
2SD291A



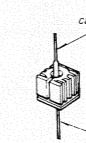
1T22  
1T40



EQA01-06S  
EQA01-12R  
EQA01-13R  
EQA01-14R



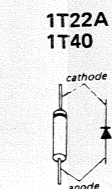
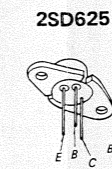
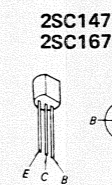
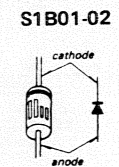
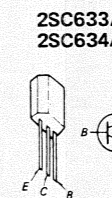
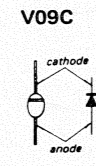
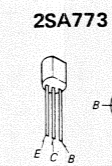
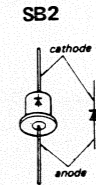
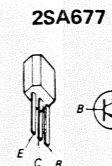
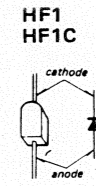
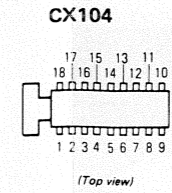
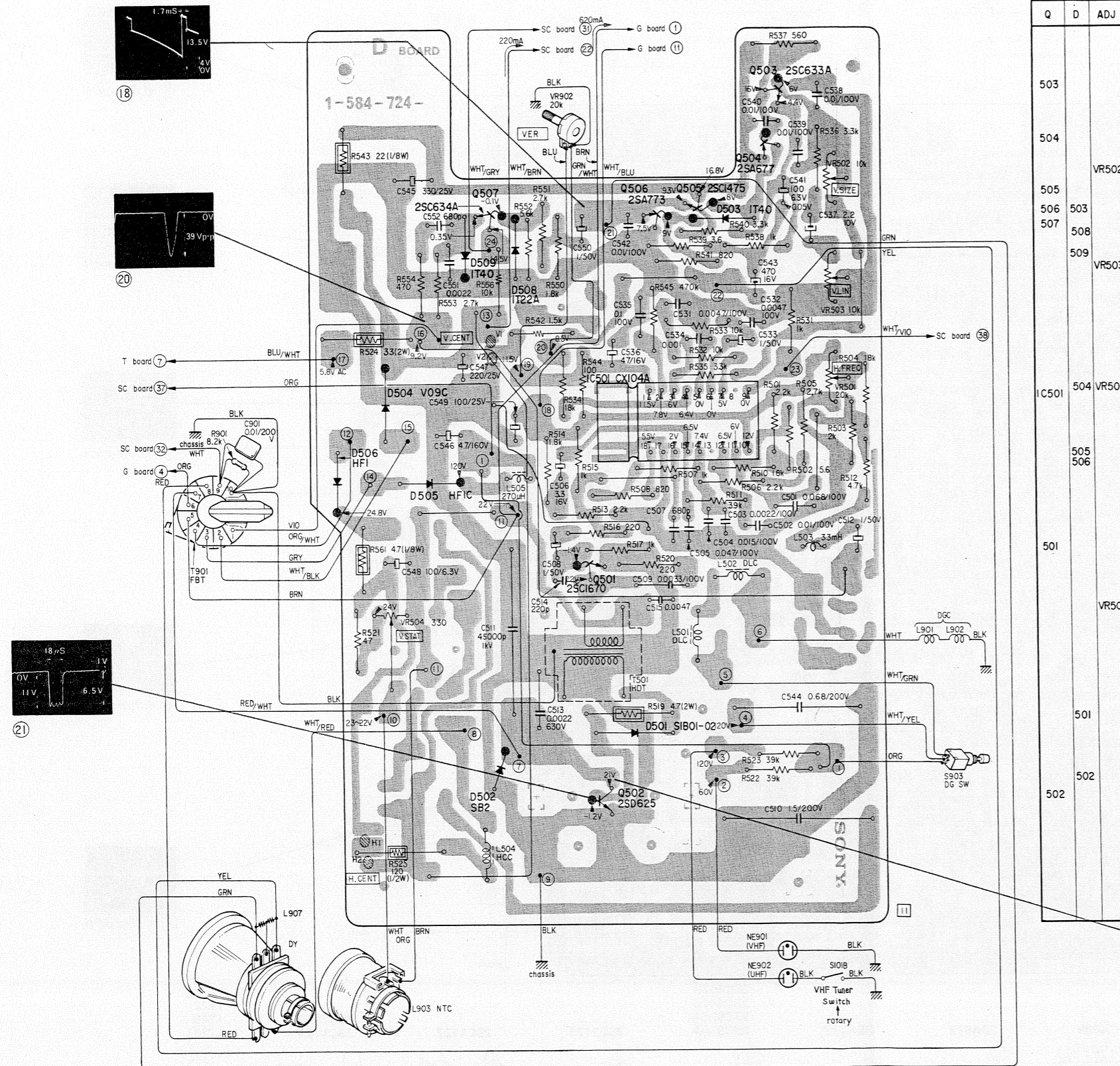
UF3



D

D

— D Board —

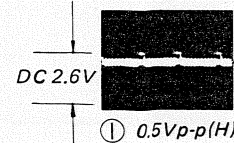
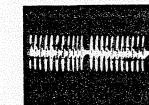
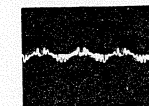
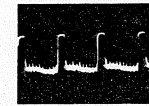
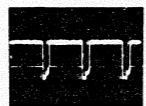


Q	D	ADJ
503		
504		
505		VR50
506	503	
507	508	
	509	VR50
IC501	504	VR50
	505 506	
501		VR50
	501	
	502	
502		

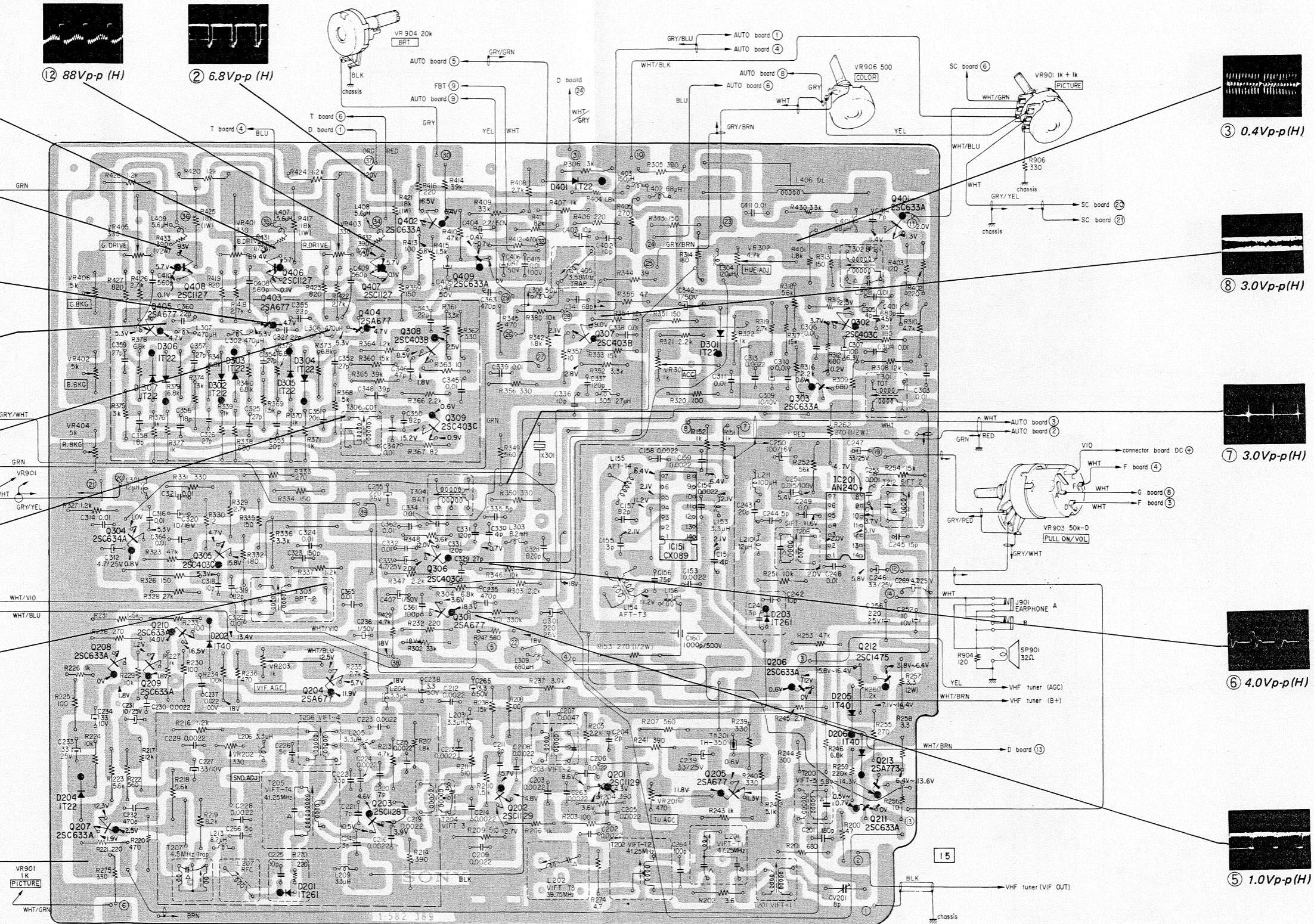
SC

SC

- SC Board -



ADJ	D	Q	IC
VR403	401		
VR401	402		
VR405			
VR302	409		
VR406	407		
	408		
	403		
	404		
	302		
	405		
	307		
	308		
VR301	304		
VR402	303		
	302		
	306		
	307		
VR404	309		
IC201			
IC151	304		
	305		
	306		
	203		
	210		
	202		
	208		
	209		
	212		
	204		
	205		
VR203			
	206		
	213		
	201		
	205		
	202		
	211		
	203		
	207		
VR202			
	206		
	213		
	201		
VR201	204		
	201		
	ADJ	D	Q
			IC



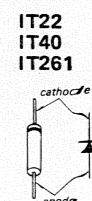
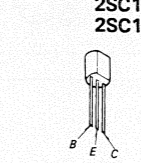
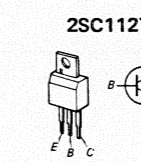
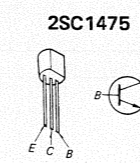
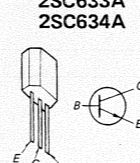
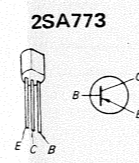
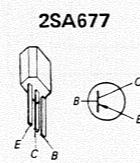
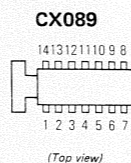
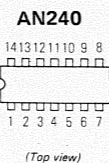
3 0.4Vp-p (H)

8 3.0Vp-p (H)

7 3.0Vp-p (H)


6 4.0Vp-p (H)

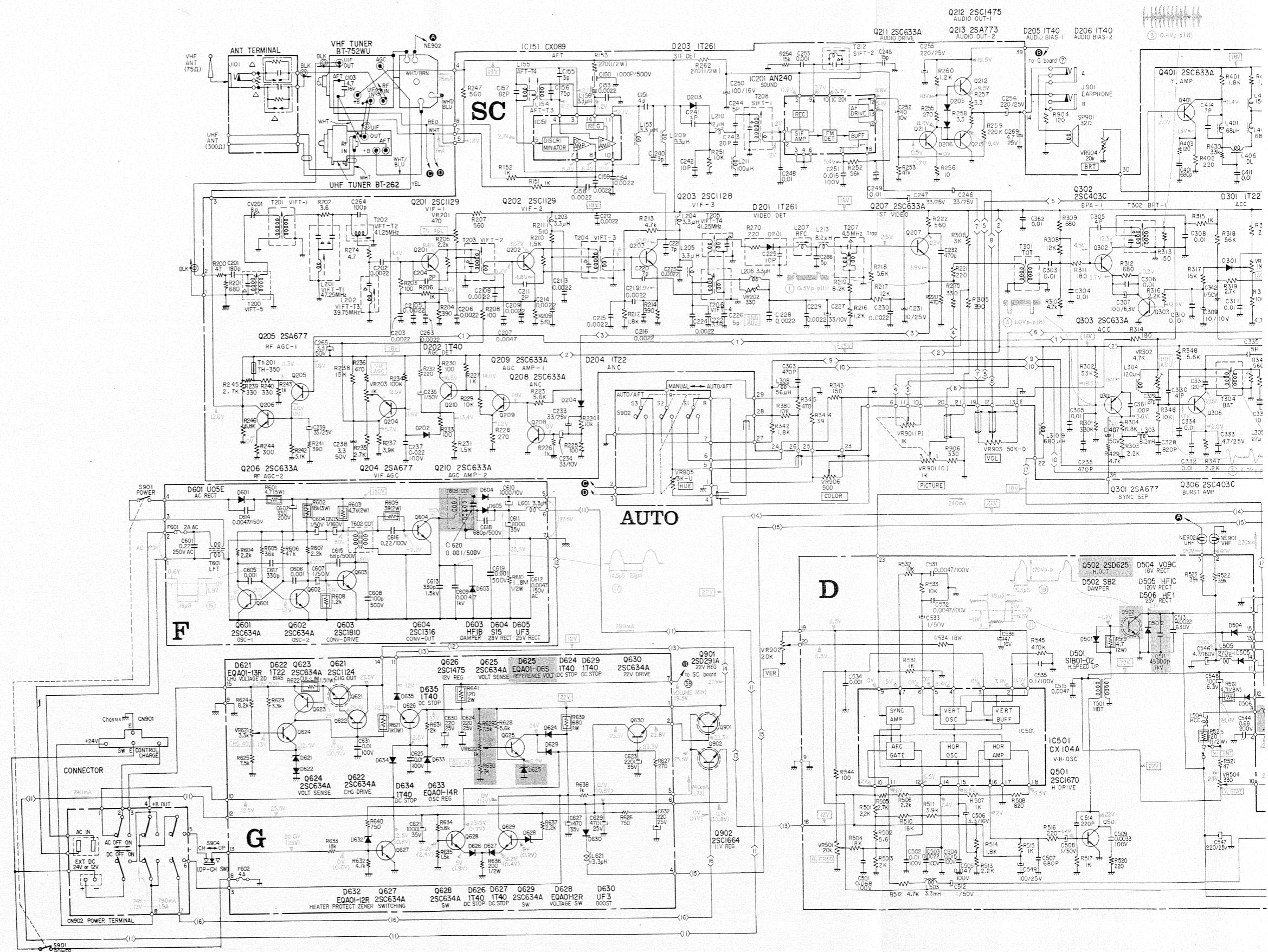
5 1.0Vp-p (H)



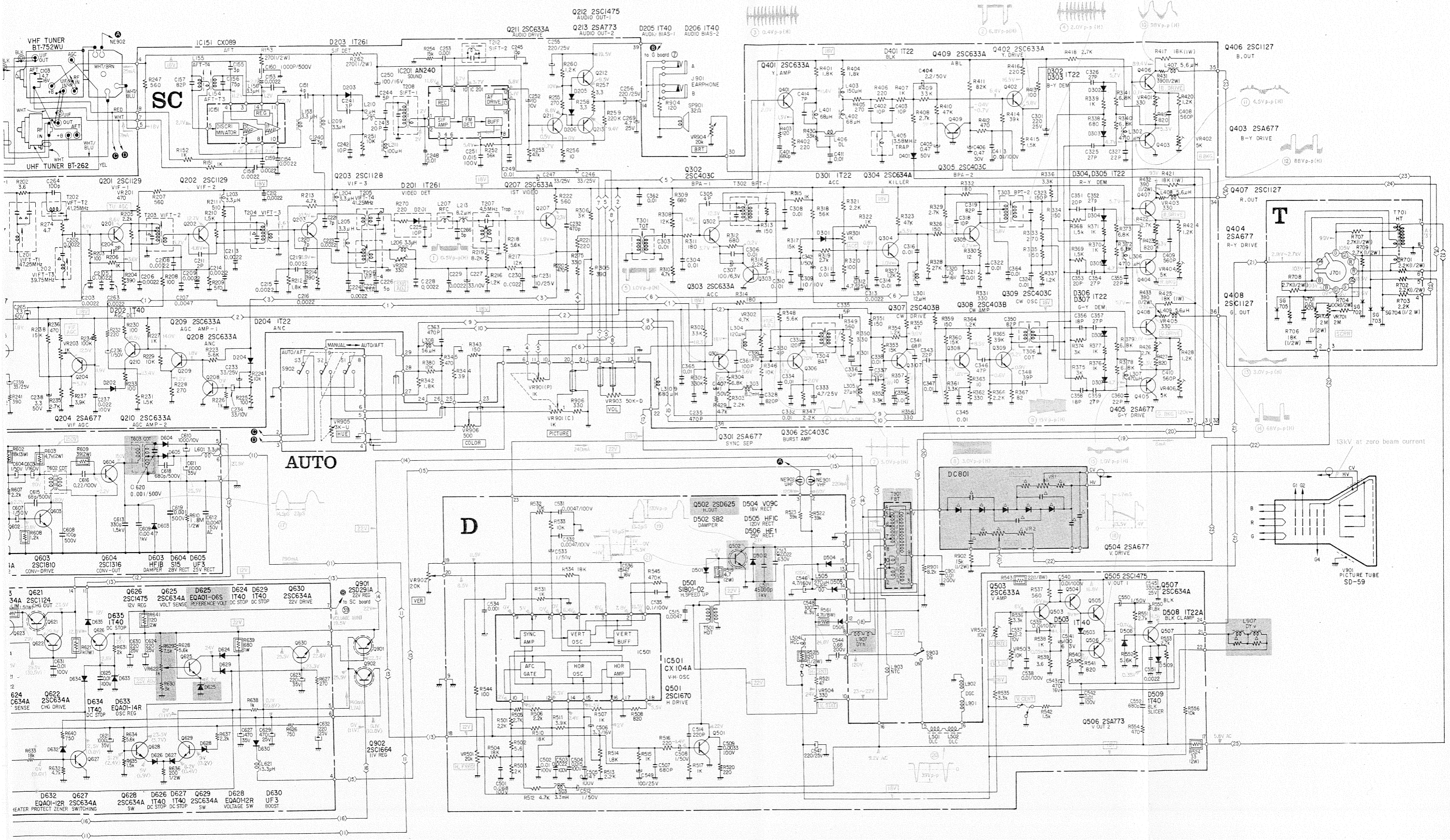
## 5.4. SCHEMATIC DIAGRAM

### Note:

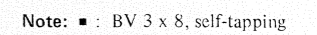
- All resistors are in ohms,  $\frac{1}{2}W$  unless otherwise noted.  
k = 1000 M = 1000k
- All capacitors are in  $\mu F$  unless otherwise noted.  
pF =  $\mu\mu F$ .
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- $\Delta$  indicates internal components.
- Voltages are DC with respect to ground unless otherwise noted. Readings are with a color-bar signal applied. Readings are taken with a 20,000-ohm-per-volt VOM.
- Voltages of ( ) in the G board are with 120V AC input and with S904 set to "CH" side.
- Voltages of < > in the G board are with 12V DC input.
- Voltages of Q601~Q604 in the F board are taken from the points to the emitter of Q604.
- Notice the pulse-width for the waveforms the peak-to-peak voltages of which are not indicated on the D and F boards.
-  indicates a nonflammable resistor.



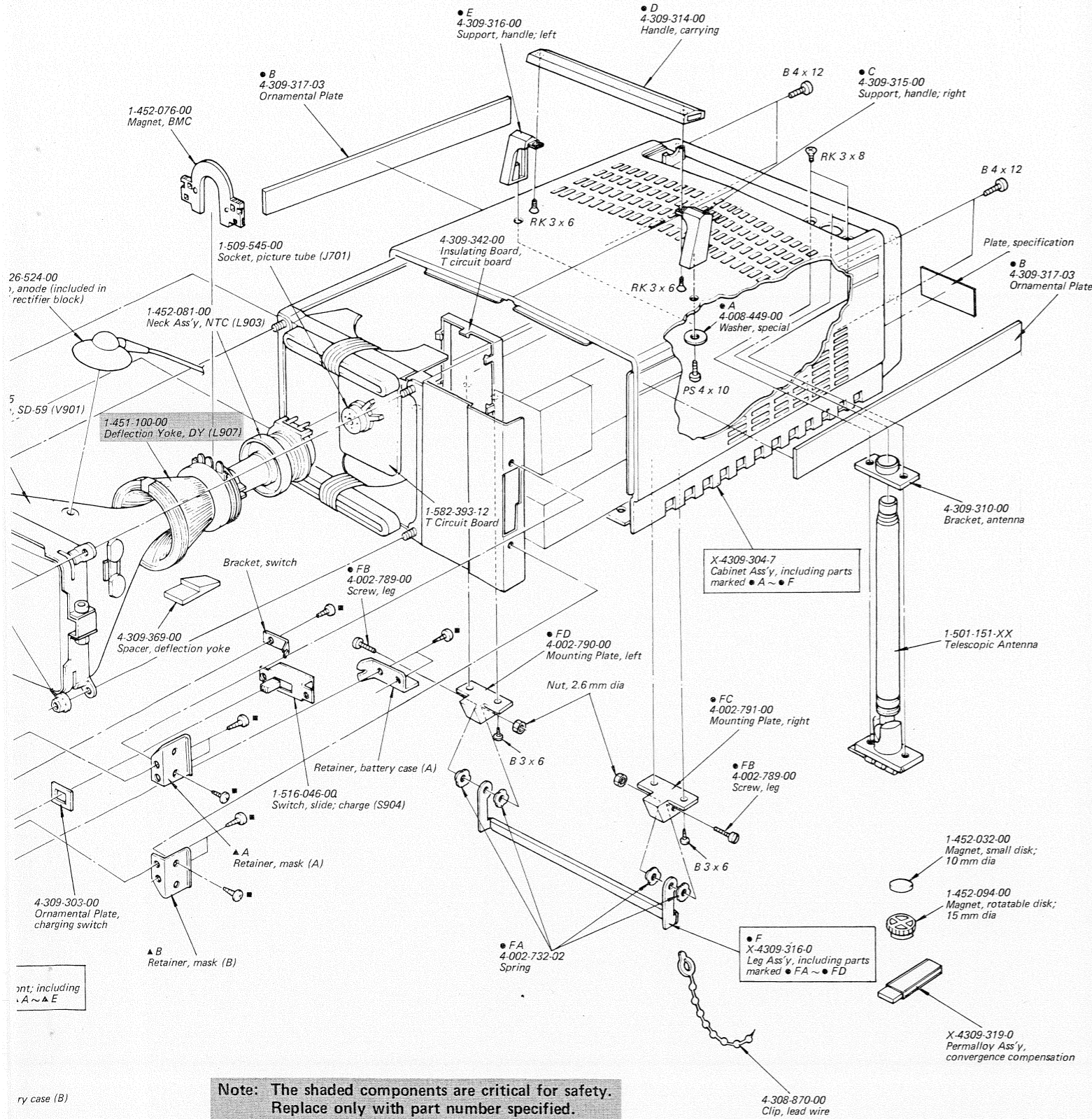
Note: The shaded components are critical for safety.  
Replace only with part number specified.



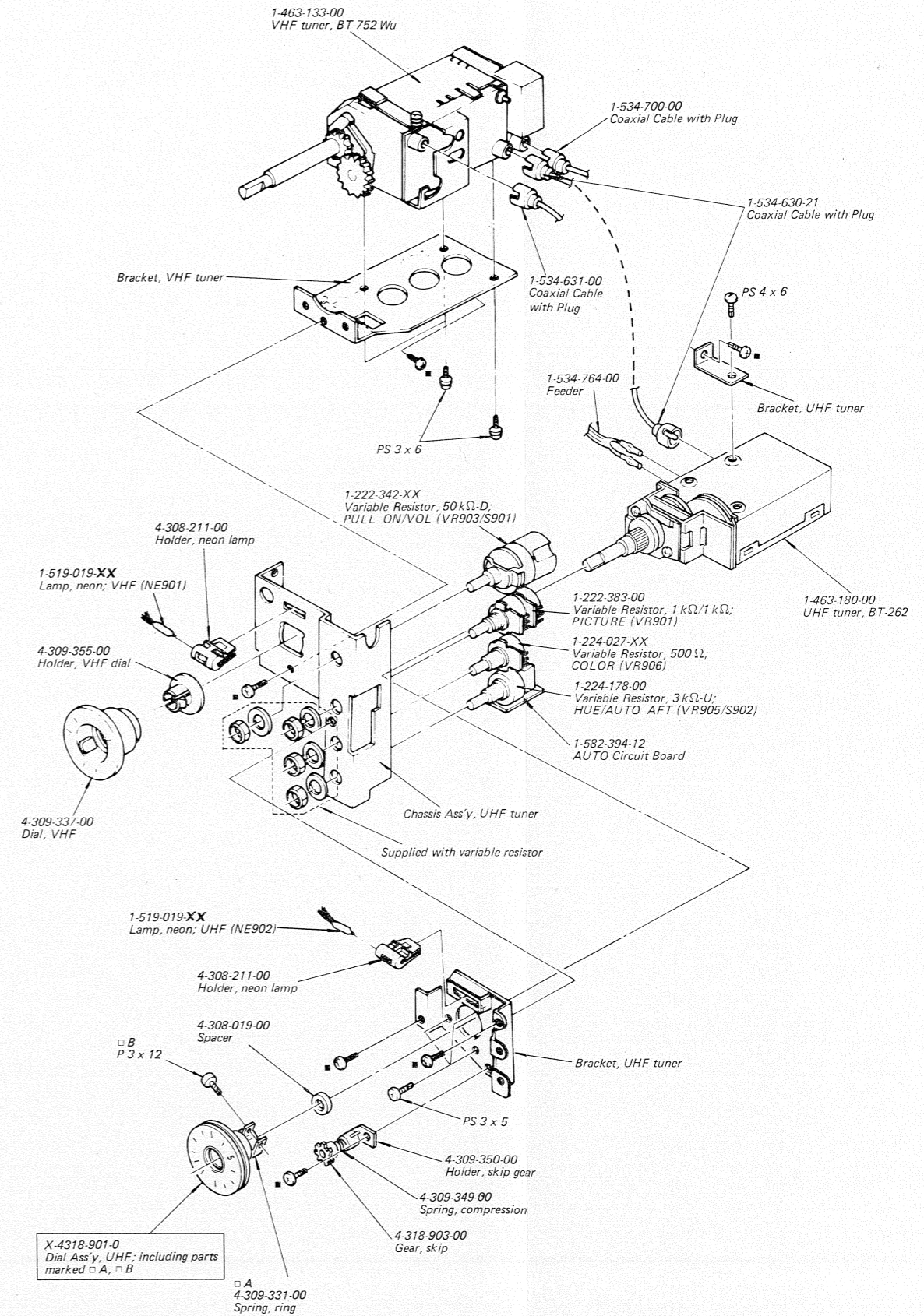
2)



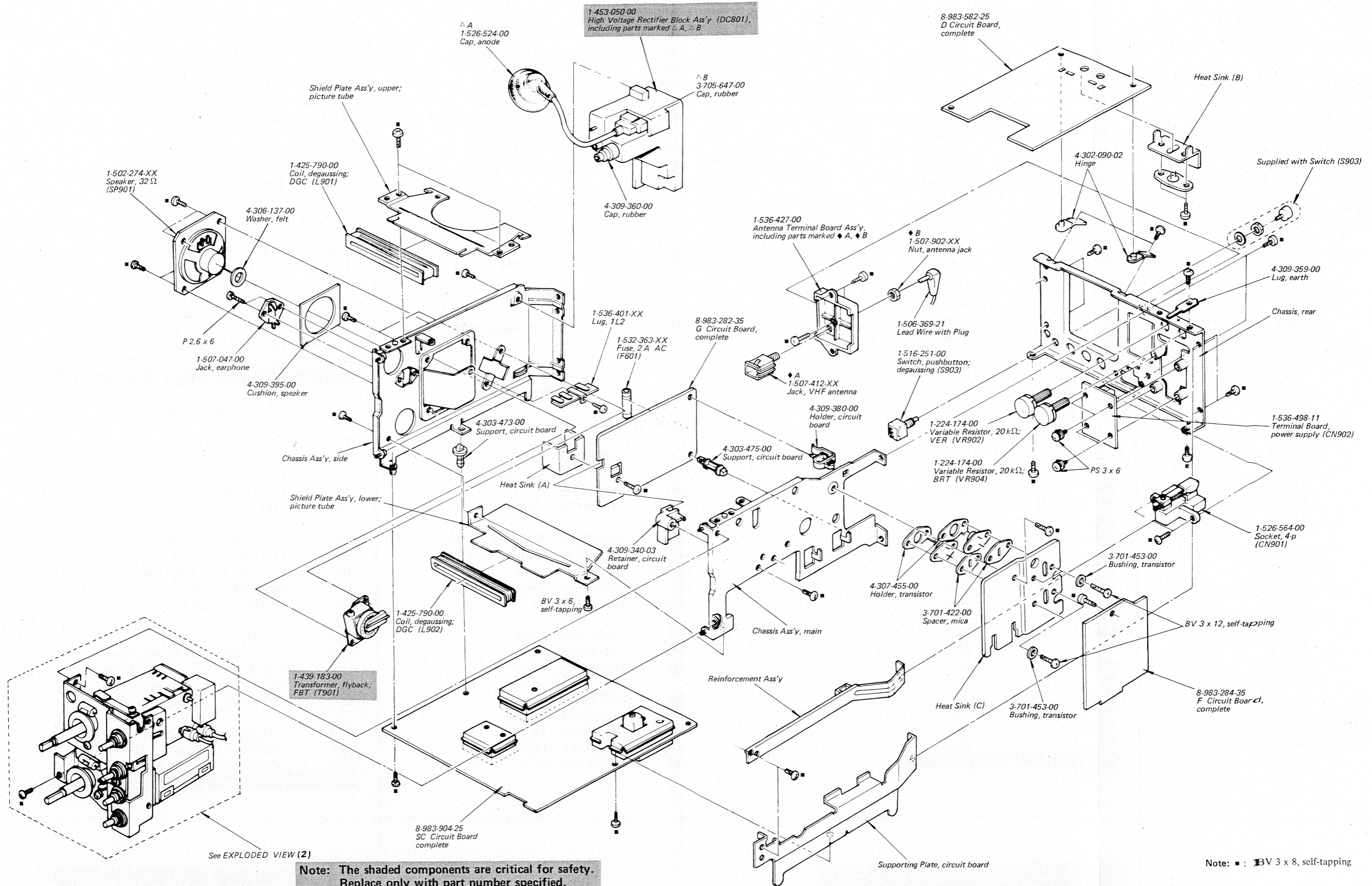
(2)



Note: ■ : BV 3 x 8, self-tapping



(3)



Note: The shaded components are critical for safety. Replace only with part number specified.

SECTION 7  
ELECTRICAL PARTS LIST

<i>Ref. No.</i>	<i>Part No.</i>	<i>Description</i>
TUNERS AND CIRCUIT BOARDS		
1-463-133-00	VHF Tuner, BT-752Wu	
1-463-180-00	UHF Tuner, BT-262	
1-582-393-12	T Circuit Board	
1-582-394-12	AUTO Circuit Board	
8-983-282-35	G Circuit Board, complete	
8-983-284-35	F Circuit Board, complete	
8-983-582-25	D Circuit Board, complete	
8-983-904-25	SC Circuit Board, complete	
SMICONDUCTORS		
Transistors		
Q201, 202	2SC1129	
Q203	2SC1128	
Q204, 205	2SA677	
Q206~211	2SC633A	
Q212	2SC1475	
Q213	2SA773	
Q301	2SA677	
Q302	2SC403C	
Q303	2SC633A	
Q304	2SC634A	
Q305, 306	2SC403C	
Q307, 308	2SC403B	
Q309	2SC403C	
Q401, 402	2SC633A	
Q403~405	2SA677	
Q406~408	2SC1127	
Q409	2SC633A	
Q501	2SC1670	
Q502	2SD625	
Q503	2SC633A	
Q504	2SA677	
Q505	2SC1475	

<i>Ref. No.</i>	<i>Part No.</i>	<i>Description</i>
Q506	2SA773	
Q507	2SC634A	
Q601, 602	2SC634A	
Q603	2SC1810	
Q604	2SC1316	
Q621	2SC1124	
Q622~625	2SC634A	
Q626	2SC1475	
Q627~630	2SC634A	
Q901	2SD291A	
Q902	2SC1664	
Diodes		
D201	1T261	
D202	1T40	
D203	1T261	
D204	1T22	
D205, 206	1T40	
D301~307	1T22	
D401	1T22	
D501	SIB01-02	
D502	SB2	
D503	1T40	
D504	V09C	
D505	HF1C	
D506	HF1	
D508	1T22A	
D509	1T40	
D601	U05E	
D603	HF1B	
D604	S15	
D605	UF3	
D621	EQA01-13R	
D622	1T22	
D624	1T40	
D625	EQA01-06S	
D626, 627	1T40	

Note: The shaded components are critical for safety.  
Replace only with part number specified.

<i>Ref. No.</i>	<i>Part No.</i>	<i>Description</i>
D628	EQA01-12R	
D629	1T40	
D630	UF3	
D632	EQA01-12R	
D633	EQA01-14R	
D634	1T40	
D635	EQA01-12R	
ICs		
IC151	CX089	
IC201	AN240	
IC501	CX104A	
Miscellaneous		
Th201	1-800- 071-XX	Thermistor, TH-350
COILS		
All coils are microinductor unless otherwise noted.		
L153	1-407-184-XX	3.3 $\mu$ H
L154	1-403-731-00	AFT-T3
L155	1-403-732-00	AFT-T4
L156	1-407-184-XX	3.3 $\mu$ H
L201	1-409-219-00	VIFT-T1, 47.25 MHz
L202	1-409-220-00	VIFT-T3, 39.75 MHz
L203~206	1-407-184-XX	3.3 $\mu$ H
L207	1-425-504-00	RFC
L209	1-407-184-XX	3.3 $\mu$ H
L210	1-407-158-XX	12 $\mu$ H
L211	1-407-169-XX	100 $\mu$ H
L213	1-407-189-XX	8.2 $\mu$ H
L301	1-407-158-XX	12 $\mu$ H
L302	1-407-661-XX	470 $\mu$ H
L303	1-407-664-00	8.2 mH
L304	1-407-170-XX	120 $\mu$ H
L305	1-407-162-XX	27 $\mu$ H

<i>Ref. No.</i>	<i>Part No.</i>	<i>Description</i>
L306, 307	1-407-661-XX	470 $\mu$ H
L308	1-407-166-XX	56 $\mu$ H
L309	1-407-193-XX	680 $\mu$ H
L401, 402	1-407-167-XX	68 $\mu$ H
L403	1-407-171-XX	150 $\mu$ H
L405	1-409-193-00	3.58 MHz Trap
L406	1-415-034-00	Delay Line
L407~409	1-407-187-XX	5.6 $\mu$ H
L501, 502	1-459-110-00	DLC
L503	1-407-200-XX	3.3 mH
L504	1-459-109-00	Horizontal Centering, HCC
L505	1-407-174-XX	270 $\mu$ H
L601	1-407-364-00	3.3 $\mu$ H
L621	1-407-184-XX	3.3 $\mu$ H
L901, 902	1-425-790-00	Degaussing, DGC
L903	1-452-081-00	Neck Ass'y, NTC
L907	1-451-100-00	Deflection Yoke, DY
TRANSFORMERS		
T200	1-403-971-00	VIFT-5
T201	1-403-971-00	VIFT-1
T202	1-409-213-00	VIFT-T2, 41.25 MHz
T203	1-403-550-00	VIFT-2
T204	1-403-550-00	VIFT-3
T205	1-409-174-00	VIFT-T4, 41.25 MHz
T206	1-403-524-00	VIFT-4
T207	1-409-146-00	4.5 MHz Trap
T208	1-403-866-00	SIFT-1
T212	1-403-871-00	SIFT-2
T301	1-425-670-00	Take-off, TOT
T302	1-425-619-00	1st Band-pass, BPT-1
T303	1-425-506-00	2nd Band-pass, BPT-2
T304	1-405-372-00	Burst Amplifier, BAT
T306	1-425-618-00	C-w Oscillation, COT
T501	1-437-062-00	Horizontal Drive, HDT
T601	1-421-225-00	Line Filter, LFT
T602	1-437-030-00	Chopper Drive, CDT
T603	1-442-594-21	C-w Oscillation, COT

Note: The shaded components are critical for safety.  
Replace only with part number specified.

<i>Ref. No.</i>	<i>Part No.</i>	<i>Description</i>
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T701	1-442-071-00	Heater, HT
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T901	1-439-183-00	Flyback, FBT
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## CAPACITORS

All capacitors are in  $\mu\text{F}$  and ceramic type unless otherwise noted. 50V or less working voltages are omitted except for electrolytic type. pF =  $\mu\mu\text{F}$ , elect = electrolytic

C103	1-121-257-11	4.7	16V	elect
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C151	1-102-937-11	4 p		
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C153, 154	1-102-121-11	0.0022		
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C155	1-102-936-11	3 p		
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C156	1-102-526-11	75 p		
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C157	1-102-496-11	82 p		
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C158, 159	1-102-121-11	0.0022		
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C160	1-102-043-11	1000 p	500 V	feed through
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C201	1-102-976-11	180 p		
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C202, 203	1-101-002-11	0.0022		
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C204	1-102-935-11	2 p		
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C205, 206	1-101-002-11	0.0022		
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C207	1-102-125-11	0.0047		
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C208, 209	1-101-002-11	0.0022		
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C211	1-102-935-11	2 p		
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C212~216)	1-101-002-11	0.0022		
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C219				
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C220	1-102-944-11	7 p		
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C221	1-102-662-11	7 p		
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C222	1-102-963-11	33 p		
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C223, 224	1-101-002-11	0.0022		
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C225	1-102-947-11	10 p		
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C226	1-102-851-11	5 p		
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C227	1-121-402-11	33	10 V	elect
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C228~230	1-101-002-11	0.0022		
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C231	1-121-389-11	10	25 V	elect
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C232	1-102-824-11	470 p		
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C233	1-121-404-11	33	25 V	elect
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C234	1-121-402-11	33	10 V	elect
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<i>Ref. No.</i>	<i>Part No.</i>	<i>Description</i>
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C235	1-102-824-11	470 p
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C236	1-121-391-11	1	50 V	elect
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C237	1-108-630-12	0.022	100 V	mylar
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C238	1-121-393-11	3.3	50 V	elect
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C239	1-121-404-11	33	25 V	elect
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C240, 241	1-102-936-11	3 p		
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C242	1-102-947-11	10 p		
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C243	1-102-958-11	20 p		
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C244	1-102-942-11	5 p		
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C245	1-102-668-11	15 p		
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C246, 247	1-121-404-11	33	25 V	elect
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C248, 249	1-101-004-11	0.01		
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C250	1-121-415-11	100	16 V	elect
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C251	1-108-628-12	0.015	100 V	mylar
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C252	1-121-651-11	10	16 V	elect
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C253	1-102-074-11	0.001		
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C255, 256	1-121-422-11	220	25 V	elect
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C263	1-101-002-11	0.0022		
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C264	1-102-529-11	100 p		
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C265	1-121-393-11	3.3	50 V	elect
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C266	1-102-942-11	5 p		
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C269	1-121-395-11	4.7	25 V	elect
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C301	1-121-422-11	220	25 V	elect
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C303, 304	1-101-004-11	0.01		
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C305	1-102-937-11	4 p		
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C306	1-101-004-11	0.01		
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C307	1-121-413-11	100	6.3V	elect
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C308	1-101-004-11	0.01		
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C309	1-121-651-11	10	16 V	elect
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C310, 311	1-101-004-11	0.01		
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C312	1-121-395-11	4.7	25 V	elect
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C313	1-101-002-11	0.0022		
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C314, 316	1-101-004-11	0.01		
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C318	1-102-947-11	10 p		
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C319	1-102-863-11	82 p		
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C320	1-121-651-11	10	16 V	elect
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C321, 322	1-101-004-11	0.01		
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**Note:** The shaded components are critical for safety. Replace only with part number specified.

# KV-5100

Ref. No.    Part No.    Description

C323	1-102-888-11	150 p			
C324	1-101-004-11	0.01			
C325, 326	1-102-961-11	27 p			
C327	1-102-959-11	22 p			
C328	1-102-117-11	820 p			
C329	1-102-961-11	27 p			
C330	1-102-937-11	4 p			
C331	1-102-765-11	120 p			
C332	1-101-004-11	0.01			
C333	1-121-395-11	4.7	25 V	elect	
C334	1-101-004-11	0.01			
C335	1-102-942-11	5 p			
C336	1-102-858-11	10 p			
C337	1-102-816-11	120 p			
C338, 339	1-101-004-11	0.01			
C341	1-101-888-11	68 p			
C342	1-121-391-11	1	50 V	elect	
C343	1-102-959-11	22 p			
C345	1-101-004-11	0.01			
C346	1-101-880-11	47 p			
C347	1-101-004-11	0.01			
C348	1-102-965-11	39 p			
C350	1-102-886-11	82 p			
C351	1-102-958-11	20 p			
C352	1-102-961-11	27 p			
C353	1-102-958-11	20 p			
C354	1-102-961-11	27 p			
C355	1-102-959-11	22 p			
C356	1-102-953-11	18 p			
C357	1-102-961-11	27 p			
C358	1-102-953-11	18 p			
C359	1-102-961-11	27 p			
C360	1-102-959-11	22 p			
C361	1-102-973-11	100 p			
C362	1-101-004-11	0.01			
C363	1-102-824-11	470 p			
C364, 365	1-101-004-11	0.01			
C401	1-102-116-11	680 p			

Ref. No.    Part No.    Description

C402, 403	1-102-858-11	10 p			
C404	1-121-450-11	2.2	50 V	elect	
C405, 406	1-121-727-11	0.47	50 V	elect	
C407	1-121-391-11	1	50 V	elect	
C408~410	1-102-115-11	560 p			
C411	1-101-004-11	0.01			
C413	1-108-692-12	0.01	100 V	mylar	
C414	1-102-944-11	7 p			
C501	1-108-636-12	0.068	100 V	mylar	
C502	1-108-626-12	0.01	100 V	mylar	
C503	1-108-618-12	0.0022	100 V	mylar	
C504	1-129-927-11	0.015	100 V	polyethylene	
C505	1-108-634-12	0.047	100 V	mylar	
C506	1-131-246-11	3.3	16 V	tantalum	
C507	1-102-116-11	680 p			
C508	1-121-952-11	1	50 V	elect	
C509	1-108-620-12	0.0033	100 V	mylar	
C511	1-130-057-11	45,000 p	1 kV	polyethylene	
C512	1-121-952-11	1	50 V	elect	
C513	1-129-706-11	0.0022	630 V	polyethylene	
C514	1-102-978-11	220 p			
C515	1-101-003-11	0.0047			
C531, 532	1-108-622-12	0.0047	100 V	mylar	
C533	1-121-952-11	1	50 V	elect	
C534	1-102-074-11	0.001			
C535	1-108-638-12	0.1	100 V	mylar	
C536	1-121-409-11	47	16 V	elect	
C537	1-127-024-11	2.2	10 V	solid aluminum	
C538~540	1-108-626-12	0.01	100 V	mylar	
C541	1-121-413-11	100	6.3 V	elect	
C542	1-108-626-12	0.01	100 V	mylar	
C543	1-121-426-11	470	16 V	elect	
C544	1-108-549-11	0.68	200 V	mylar	
C545	1-121-654-11	330	25 V	elect	
C546	1-121-246-11	4.7	160 V	elect	
C547	1-121-422-11	220	25 V	elect	
C548	1-121-413-11	100	6.3 V	elect	
C549	1-121-416-11	100	25 V	elect	

**Note: The shaded component is critical for safety.  
Replace only with part number specified.**

<i>Ref. No.</i>	<i>Part No.</i>	<i>Description</i>			
C550	1-121-952-11	1	50 V	elect	
C551	1-102-121-11	0.0022			
C552	1-102-116-11	680 p			
C601	1-108-745-12	0.22	250 V AC	mylar	
C602	1-123-113-11	330	200 V	elect	
C603	1-121-189-11	1	160 V	elect	
C604	1-121-391-11	1	50 V	elect	
C605, 606	1-108-792-12	0.001	50 V	mylar	
C607	1-121-391-11	1	50 V	elect	
C608	1-101-810-11	100 p	500 V		
C609	1-129-903-11	0.0047	1 kV	polyethylene	
C610	1-121-736-11	1000	10 V	elect	
C611	1-121-388-11	1000	35 V	elect	
C612	1-102-189-11	0.0047	150 V AC		
C613	1-102-327-11	330 p	1.5 kV		
C614	1-102-189-11	0.0047	150 V		
C615	1-102-989-11	68 p	500 V		
C616	1-108-642-12	0.22	100 V	mylar	
C617	1-102-112-11	330 p			
C618	1-102-002-11	680 p	500 V		
C619, 620	1-102-038-11	0.001	500 V		
C621	1-121-388-11	1000	35 V	elect	
C623	1-121-261-11	220	35 V	elect	
C624	1-121-422-11	220	25 V	elect	
C625	1-105-713-12	0.01	100 V	mylar	
C627	1-121-361-11	470	35 V	elect	
C629	1-121-733-11	470	25V	elect	
C630	1-121-422-11	220	25 V	elect	
C631	1-105-713-12	0.01	100 V	mylar	
C632	1-121-422-11	220	25 V	elect	
C701	1-102-050-11	0.01	500 V		
C901	1-108-692-11	0.01	200 V	mylar	
CV201	1-141-138-XX	8 p	trimmer		

## *Ref. No.*   *Part No.*   *Description*

### RESISTORS

All resistors are in ohms. Regular-type ¼W carbon and composition resistors are omitted. Check schematic diagram for resistance values. All adjustable and variable resistors have characteristic curve B, unless otherwise noted. k = 1000, M = 1000 k

R153	1-244-859-11	270	½ W	carbon
R262	1-244-859-11	270	½ W	carbon
R417	1-206-107-11	18 k	1 W	metal oxide
R421				
R425				
R431~433	1-202-563-11	390±5%	½ W	composition
R519	1-206-455-11	4.7	) 2 W	metal oxide (nonflammable)
R524	1-206-475-11	33		
R525	1-244-851-11	120	½ W	carbon (nonflammable)
R543	1-211-417-11	22	) 1/8 W	carbon (nonflammable)
R561	1-211-401-11	4.7		
R601	1-217-062-11	4.7	5 W	wirewound (nonflammable)
R602	1-206-755-11	18 k	3 W	metal oxide (nonflammable)
R603	1-206-680-11	4.7 k	2 W	metal oxide (nonflammable)
R608	1-211-940-11	1.2 k	¼ W	carbon (nonflammable)
R609	1-206-477-11	39	2 W	metal oxide (nonflammable)
R610	1-202-651-11	1.8M	½ W	composition
R621	1-213-143-11	1 k	1 W	metal oxide (nonflammable)
R622	1-212-362-11	1.5		
R629	1-244-694-11	7.5 k	¼ W	carbon
R630	1-244-684-11	3 k	¼ W	carbon
R636	1-244-856-11	2000	½ W	carbon
R639	1-213-141-11	680	1 W	metal oxide (nonflammable)
R641	1-206-642-11	120	2 W	metal oxide (nonflammable)

**Note:** The shaded components are critical for safety. Replace only with part number specified.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
R701~703	1-202-581-11	2.2 k±5%
R704	1-202-621-11	100 k±5%
R705	1-202-652-11	2 M±5%
R706	1-202-603-11	18 k±5%
R707~709	1-202-583-11	2.7 k±5%
		½ W composition
R902	1-202-601-11	15 k±5% ½ W composition
VR201	1-224-641-XX	470, adjustable; TU AGC
VR202	1-224-640-XX	330, adjustable; SND ADJ
VR203	1-224-642-XX	1 k, adjustable; VIF AGC
VR301	1-224-642-XX	1 k, adjustable, ACC
VR302	1-224-644-XX	4.7 k, adjustable, HUE ADJ
VR401	1-224-640-XX	330, adjustable; B. DRIVE
VR402	1-222-716-XX	5 k, adjustable; B. BKG
VR403	1-224-640-XX	330, adjustable; R. DRIVE
VR404	1-222-716-XX	5 k, adjustable; R. BKG
VR405	1-224-640-XX	330, adjustable; G. DRIVE
VR406	1-222-716-XX	5 k, adjustable; G. BKG
VR501	1-224-177-XX	20 k, adjustable; H. FREQ
VR502	1-224-176-00	10 k, adjustable; V. SIZE
VR503	1-224-176-00	10 k, adjustable; V. LIN
VR504	1-224-640-XX	330, adjustable; V. STAT
VR621	1-224-644-XX	3.3k, adjustable; CHG ADJ
VR622	1-224-642-XX	1 k, adjustable; 22 V ADJ
VR701	1-224-173-00	2M, adjustable; SCRN
VR901	1-222-383-00	1 k/1 k, variable; PICTURE
VR902	1-224-174-00	20 k, variable; VER
VR903, S901	1-222-342-XX	50 k-D, variable; PULL ON/VOL
VR904	1-224-174-00	20 k, variable; BRT
VR905, S902	1-224-178-00	3k-U, variable; HUE/AUTO AFT
VR906	1-224-027-XX	500, variable; COLOR
MISCELLANEOUS		
CN901	1-526-564-00	Socket, 4-p
CN902	1-536-498-11	Terminal Board, power supply

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
DC801	1-453-050-00	High Voltage Rectifier Block Ass'y
		including,
	1-526-524-00	Cap, anode
	3-705-647-00	Cap, rubber
F601	1-532-363-XX	Fuse, 2A AC
F602	1-532-318-XX	Fuse, 4A
J701	1-509-545-00	Socket, picture tube
J901	1-507-047-00	Jack, earphone
NE901	1-519-019-XX	Lamp, neon; VHF
NE902	1-519-019-XX	Lamp, neon; UHF
S903	1-516-251-00	Switch, pushbutton; degaussing
S904	1-516-046-00	Switch, slide; charge
SG702~705	1-519-063-XX	Spark Gap, 1.5 kV
SP901	1-502-274-XX	Speaker, 32 Ω
V901	8-736-201-05	Picture Tube, SD-59
X301	1-527-154-00	Crystal
	1-452-032-00	Magnet, small disk; 10 mm dia
	1-452-076-00	Magnet, BMC
	1-452-094-00	Magnet, rotatable disk; 15 mm dia.
	1-501-151-00	Telescopic Antenna
	1-506-369-21	Lead Wire with Plug
	1-507-412-XX	Jack, VHF antenna
		(included in Antenna Terminal Board Ass'y)
	1-507-902-XX	Nut, antenna jack
		(included in Antenna Terminal Board Ass'y)
	1-526-524-00	Cap, anode
		(included in HV Rectifier Block Ass'y)
	1-534-630-21	Coaxial Cable with Plug
	1-534-631-00	Coaxial Cable with Plug
	1-534-700-00	Coaxial Cable with Plug
	1-534-764-00	Feeder
	1-536-401-XX	Lug, 1L2

**Note:** The shaded components are critical for safety.  
Replace only with part number specified.

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
1-536-427-00		Antenna Terminal Board Ass'y
		including;
	1-507-412-XX	Jack, VHF antenna
	1-507-902-XX	Nut, antenna jack

#### PACKING MATERIALS AND ACCESSORIES

<u>Part No.</u>	<u>Description</u>
X-3701-031-5	Card Ass'y, warranty
Y-2063-103-0	Loop Antenna (AN-15)
Y-4401-701-3	Connector, external antenna (EAC-4)
1-504-034-32	Earphone (ME-20B)
1-551-181-00	Cord, power
3-701-352-00	Bag, polyethylene
3-701-355-01	Label, tack
4-309-375-00	Sheet, protection
4-309-383-00	Cushion, left
4-309-384-00	Cushion, right
4-318-905-00	Carton, individual
4-491-039-12	Tag, VHF antenna
4-491-053-12	Tag, eye-catcher
4-491-107-22	Safety Tips
4-493-214-12	Card, caution
4-495-548-21	Manual, instruction

**TRINITRON®  
COLOR TV**

**KV-5100**

*USA Model*

June, 1976

## **CORRECTION**

**Chassis No.**

Correct chassis No. of KV-5100 service manual (on page 1) and supplement No. 1 (on page 1).

	<b>Incorrect</b>	<b>Correct</b>
<b>Chassis No.</b>	<b>SCC-37B-B</b>	<b>SCC-105A-A</b>

**SONY®**  
**SERVICE MANUAL**

**TRINITRON®  
COLOR TV**

# KV-5100

*USA Model*

## SUPPLEMENT

Chassis No. SCC-37B-B

No. 1  
June, 1976

**Subject: Circuit Board Modifications**

This supplement updates the service manual to include production changes starting with Serial No. 10,501.  
File this supplement with the service manual.

### 1. CHANGED PARTS LIST

(Serial No. 10,501 and later)

Ref. No.	Former Part No./Part Value	New Part No./Part Value
L602 L605	.....	1-407-184-XX 3.3μH microinductor
C616	1-108-642-12 0.22μF 100 V mylar	1-108-640-11 0.15μF 100 V mylar
C618	1-102-002-11 680pF 500 V ceramic	.....
C621	.....	1-102-038-11 1000pF 500 V ceramic
C902	.....	1-102-191-11 0.001μF 125 V ceramic
C622	.....	1-102-430-11 33pF 3 kV ceramic

(Serial No. 14,501 and later)

Ref. No.	Former Part No./Part Value	New Part No./Part Value
T901	1-439-183-00 Flyback, FBT	1-439-183-21 Flyback, FBT
C511	1-130-057-11 45,000p 1 kV polyethylene	1-129-990-11 31,000pF 1 kV polyethylene
C513	1-129-706-11 0.0022μF 630 V polyethylene	1-129-704-11 1,500pF 630 V polyethylene
R902	1-202-601-11 15kΩ±5% ½W composition	1-202-613-11 47kΩ±5% ½W composition
R519	1-206-455-11 4.7Ω 2W metal oxide (nonflammable)	1-206-461-11 8.2Ω 2W metal oxide (nonflammable)

Note: When replacing FBT (T901), change values of C511, C513 and R902 simultaneously.

**SONY®**  
**SERVICE MANUAL**

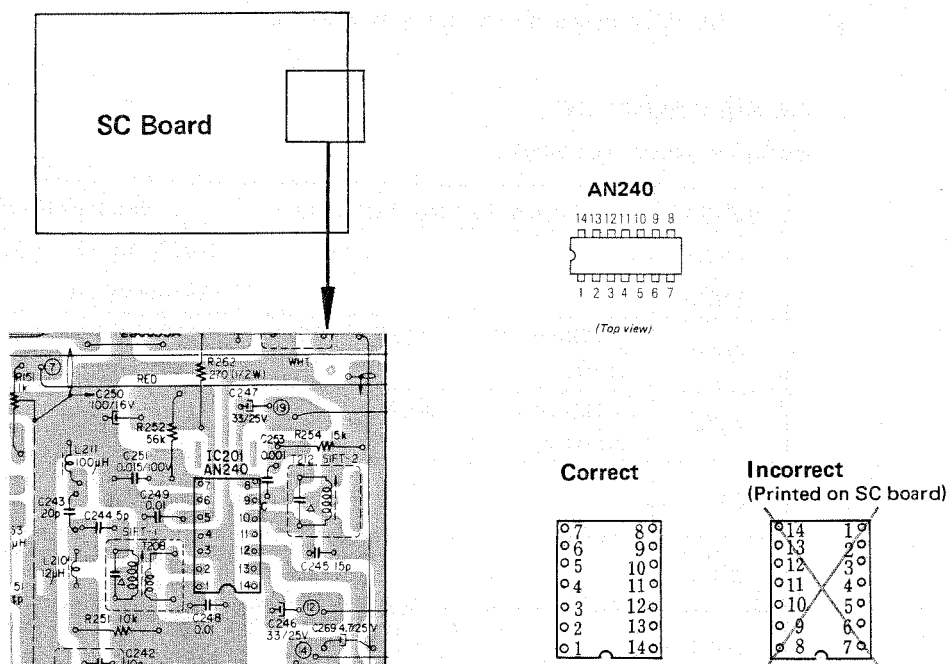
## 2. INTERCHANGEABILITY

Former and new circuit boards are interchangeable.

## 3. TERMINAL NUMBERS OF IC201

For some sets, the terminal numbers of IC201 printed on the SC board are different on the mounting diagram in the service manual.

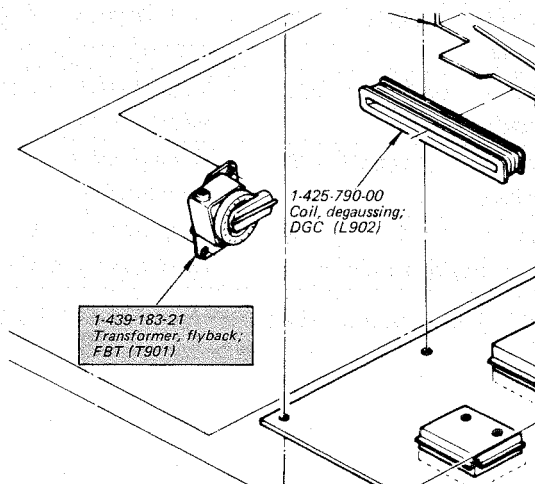
When replacing IC201 (AN240), mount it as shown in the service manual.



## 4. EXPLODED VIEWS (3)

Page 35

; changed portion

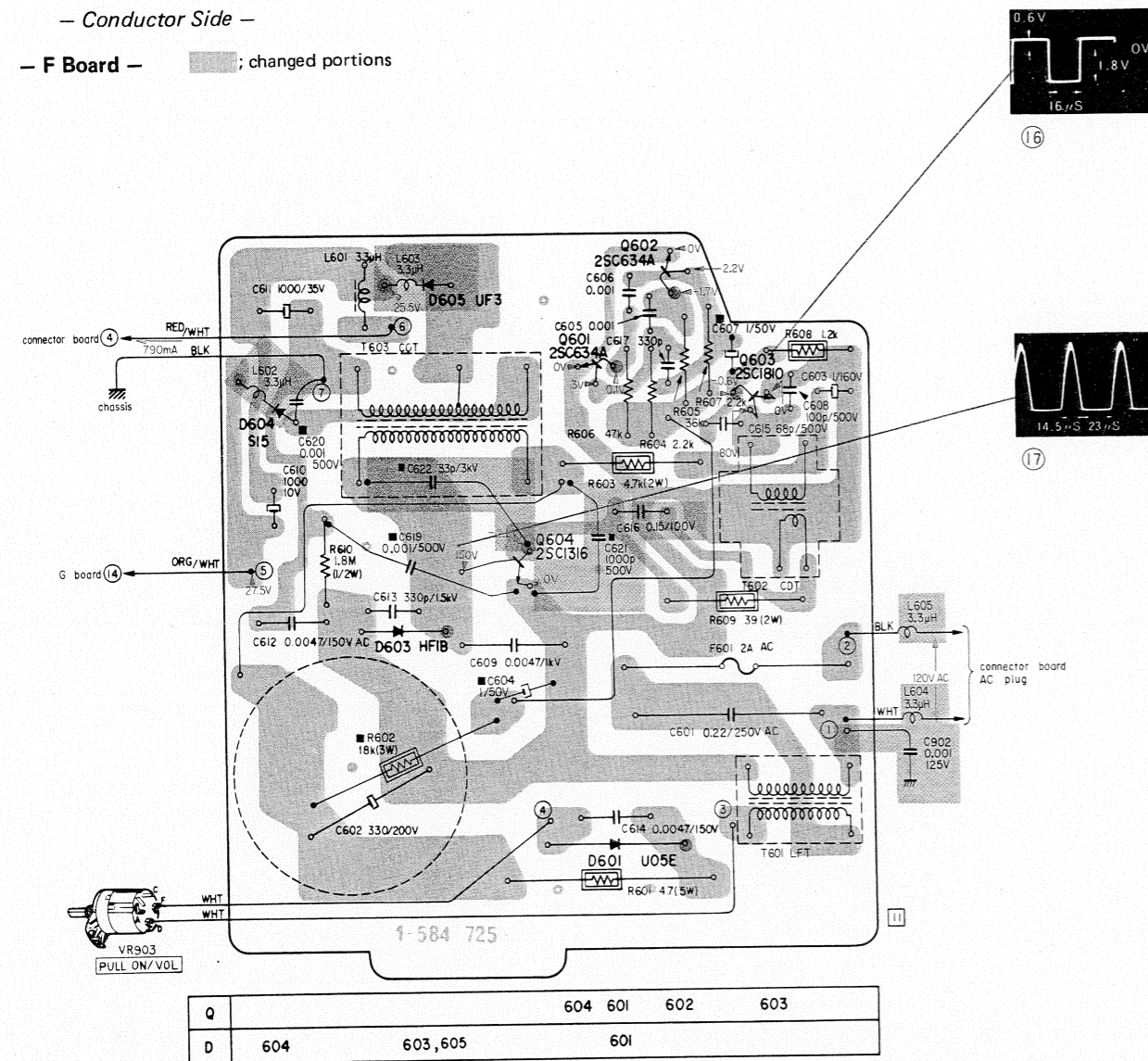


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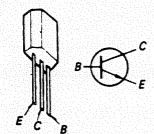
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## 5. MOUNTING DIAGRAMS

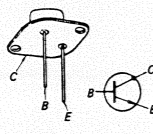
— Conductor Side —

— F Board — ; changed portions

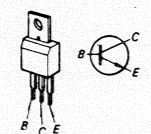
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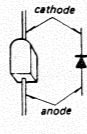
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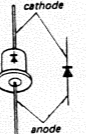
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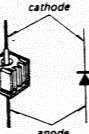
HF1B



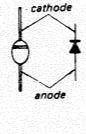
S15




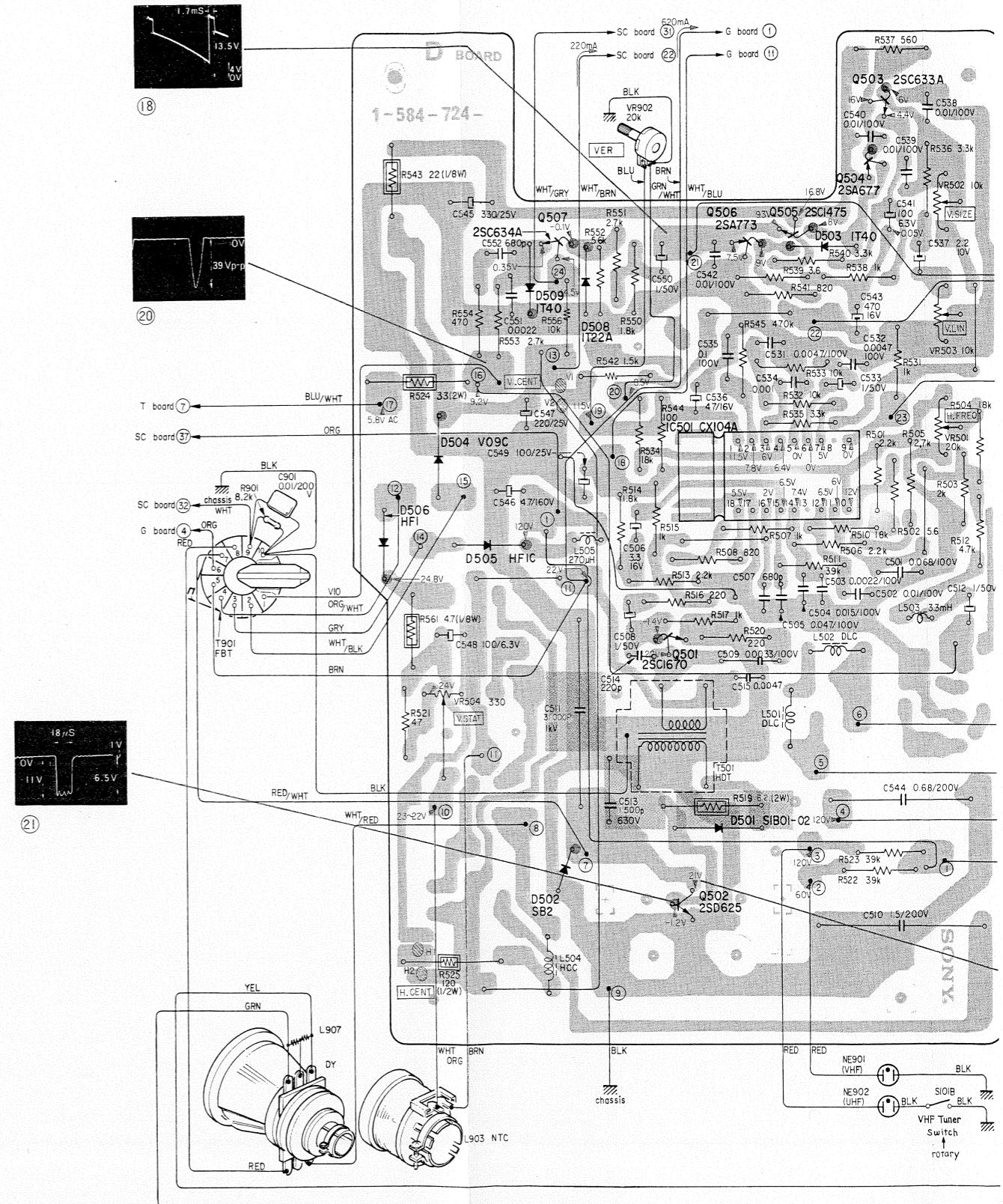
UF3



U05E



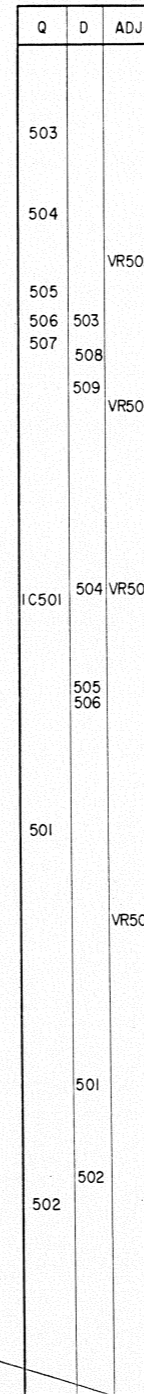
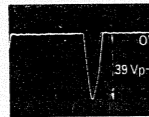
— D Board —

 changed portions

D

D


changed portions



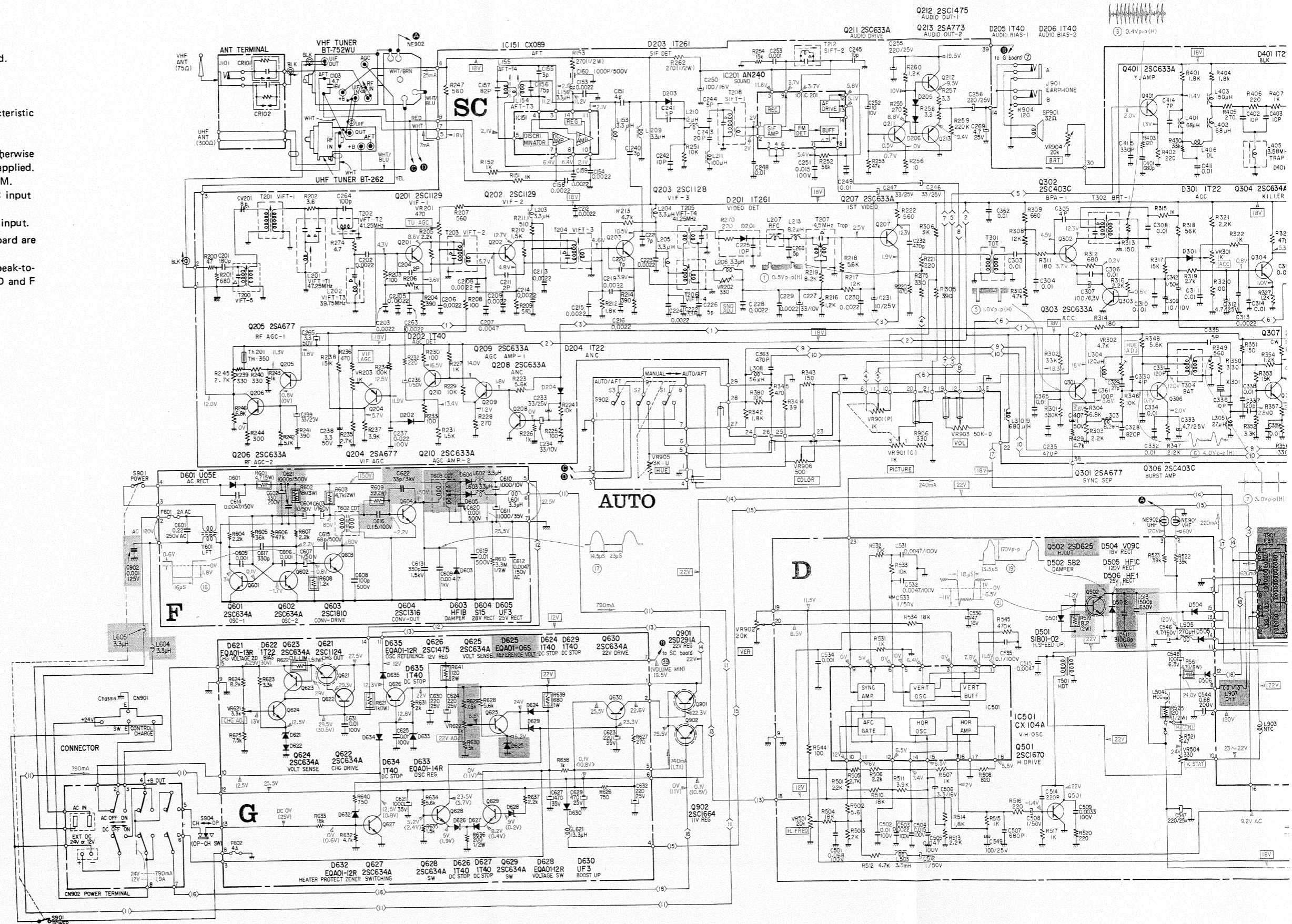
## 6. SCHEMATIC DIAGRAM

## Note:

- All resistors are in ohms,  $\frac{1}{2}W$  unless otherwise noted.  
k = 1000 M = 1000k
- All capacitors are in  $\mu F$  unless otherwise noted.  
 $\mu F = \mu\mu F$ .
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- $\Delta$  indicates internal components.
- Voltages are DC with respect to ground unless otherwise noted. Readings are with a color-bar signal applied. Readings are taken with a 20,000-ohm-per-volt VOM.
- Voltages of ( ) in the G board are with 120V AC input and with S904 set to "CH" side.
- Voltages of < > in the G board are with 12V DC input.
- Voltages of Q601~Q604 and 150V in the F board are taken from the points to the emitter of Q604.
- Notice the pulse-width for the waveforms the peak-to-peak voltages of which are not indicated on the D and F boards.
- $\frac{1}{2}W$  indicates a nonflammable resistor.

 : changed portions

Note: The shaded components are critical for safety.  
Replace only with part number specified.



KV-3100 KV-3100



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